# Ipswich Public Schools Technology Plan 2020-2023

*Approved by Ipswich School Committee on 5/21/20*

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# EXECUTIVE SUMMARY

## Introduction
The Ipswich Public Schools is committed to providing our students and staff with the technology and digital resources necessary to create transformative learning experiences that support a culture of innovation as outlined in the Strategy for District Improvement Plan.  The goal of the Technology Plan is to create a shared vision of the role technology will play when creating innovative learning experiences and environments. This plan identifies the challenges, possibilities, and opportunities technology and digital learning will provide us over the next three years.

This plan utilizes the Massachusetts Department of Elementary and Secondary Education (DESE) technology benchmark recommendations in the DESE Guidelines for technology plans as an organizational framework.  In Massachusetts, District Technology Plans are not required but a process of documenting technology planning is recommended. Additionally, we also referenced the 2017 National Education Technology Plan (https://tech.ed.gov/netp/) for recommendations when implementing effective use of technology to support teaching and learning. Currently, the office of Education and Technology is updating and expanding upon the 2017 document and a new document will be released in 2020. We will reference this new document when it becomes available and incorporate new developments in education technology to support our vision.

The technology benchmarks, goals, and action items from this plan will be incorporated throughout current and future district documents such as the Strategy for District Improvement, School Improvement Plans, and Elementary/Secondary Education Plans as recommended by DESE.

The benchmarks, goals and action items outlined in this plan will serve as a roadmap for our district to provide purposeful and planned digital learning opportunities throughout a students' K-12 experience in Ipswich.

# BENCHMARKS

## Benchmark 1:   Commitment to a Clear Vision and Implementation Strategies

### A.   Technology Vision Statement

The first step in moving towards a shared vision is for our school community to embrace the understanding that digital literacy is a key component and essential skill in preparing students for college and career readiness in the 21st Century.  Technology has changed the way our students will live, work, and interact and is continuing to evolve at an accelerated pace. Students now need to be equipped with a unique skillset to prepare for the post-secondary experiences and careers of the future.  The district technology plan contains a consolidated view, clearly stated goals and implementation strategies that align with the Strategy for District Improvement released in 2019.

In 2016 Massachusetts DESE released the new Digital Literacy and Computer Science curriculum standards to replace existing 2008 standards. These standards are broken up into four strands: Computing and Society, Digital Tools and Collaboration, Computing Systems, and Computational Thinking. They articulate a progression of knowledge and skills in digital literacy and computer science from Kindergarten to grade 12 and overlap other academic discipline standards, especially in the areas of science, technology, engineering and mathematics. These standards provide the drive for our educators to examine existing and create new curriculum resulting in the application and assessment of new experiences for our students.

We will discover that the essential learning outcomes of the DLCS Standards are woven throughout all post-secondary opportunities and careers our students will encounter. Having the knowledge, skills and dispositions to not only use technology but to enable it as a creative tool to solve complex problems is an essential literacy skill our students must now graduate with.

The Ipswich Public Schools is a dynamic community which includes the administrative team, committees, faculty, staff, students, families, and the town itself. The technology department is committed to working closely with all of these groups in order to meet their diverse and ever-changing needs. Our goal is to ensure technology is appropriately used, both in and out of the classroom, in a way that fosters and supports the relationships which distinguish our school community.

### B. Technology Department and Committee Members

Technology Department:
Keith Borgen, Director of Technology
Jim DePue, Data Manager
Jim Evans, Help Desk Manager and Applications Specialist
Bill Ford, Systems Administrator
Amy Gregory, Digital Learning Specialist

Technology Specialist Committee Members 2019-2020:

| **High School** | **Middle School** |
|---|---|
| Heather Chang (MS/HS) | Sarah Borton |
| Emily Chandler | Jenn Couto |
| Lisa Ellrott | Diana Somers |
| Bruce Mabbott | |
| Mary Manos | **Winthrop School** |
| Andy Sargent | Keith Archung |
| Colleen Werner | Lauren Fonvielle |
| | Lisa Nylen |
| **Paul F. Doyon Memorial School** | Karen Sekiguchi |
| Teresa Hohenstein | |
| Kim Meaney | |
| Jena Woodworth | |

### C. Needs Assessment:

During the 2018-19 school year a subcommittee of the Technology Committee gathered information from staff through a survey to evaluate the needs and use with technology district-wide. Data collected was used to create goals for the Digital Learning Specialist and Technology Committee's work during 2019-20. Historically, the IT Department has created a yearly survey to evaluate technology needs as well.

To ensure educators have the necessary technology and digital tools necessary we are now working together to create accessible forms educators can access to request:
- new or replacement equipment
- subscriptions and applications

We are currently coordinating access to these forms and current district technology resources through the creation of a department website (www.ipstigertech.com) that will launch in Spring 2020. The Director of Technology and Digital Learning Specialist will complete a yearly review of equipment, applications, and subscriptions being utilized. Moving forward, the Digital Learning Specialist and Director of Technology will survey district staff together every year to forecast future needs.

### D. Budget

In collaboration with district administration the Director of Technology develops a budget annually that includes staffing, infrastructure, hardware, software, services, new initiatives, professional development, supplies and support district-wide. In addition to the appropriated budget other funding sources may include the Town of Ipswich Capital Plan, choice monies, and government

sources such as ERate and other grants.

Educators have the option each year of writing Paine and Edmund Traverso-Robert Weatherall Innovation Grants. These are offered to educators who have an innovative idea to enrich and enhance the student experience. Many of these serve as an alternative means of funding technology purchases outside of the school budget.

### E. Technology Strategic Plan Goals
Each Spring a priority matrix is created to weight the importance of potential technology related initiatives for the following school year. These potential priorities are weighted on a priority matrix using criteria which include:
- Enhancing learning
- Improves instruction
- Scalability and reusable effort
- Learning curve
- Cost
- Length of time

For example, during the 20-21 school year some of the projects that will be weighted on that scale include:
- Storage: upgrade storage hardware and add additional storage for security, backups and local district storage
- Firewall: upgrade hardware for Ipswich
- State of the security consult
- Explore new LMS options to update our district online presence to offer families and community members a consistent experience
- Options for Remote Learning

## Benchmark 2:   Technology Integration and Literacy

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### A. Technology Integration

**Outside Teaching Time**
We support our educators in using technology on a daily basis. We distribute a district issued laptop computer to all faculty members PreK-12th grade to ensure the ability to connect both in and out of the classroom.

**Technology Integration for Teaching and Learning**
The Digital Learning Specialist and Technology Committee members are committed to providing support to faculty and staff to successfully integrate technology and digital tools for seamless integration into the curriculum for face-to-face and remote learning. We aim to support our educators when integrating technology into their lessons to enhance the student learning experience. We are working to build and launch a website dedicated to district technology information ([www.ipstigertech.com](www.ipstigertech.com)) available in Spring 2020. This website will support teachers when choosing and learning new tools to implement into a remote learning teaching plan.

This will include information useful to teachers when integrating technology such as:
Database of Approved Apps from the Director of Technology
Current Database of IPS Digital Subscriptions for educator and student use

IPS DLCS Power Standards with current curriculum connections

**B. Technology Literacy**
We strive to prepare our students with technology skills that promote responsible use, creativity, critical thinking, collaboration, and evaluation.  As consumers of technology, students need to be provided the digital learning experiences to effectively locate, use, and evaluate digital resources. We also must weave experiences into our core curriculum to allow our students to use technology to create products and communicate with digital tools. The goal of the Massachusetts DLCS standards is to develop and prepare our students to be future ready.  We encourage our educators to integrate DLCS standards into existing core curriculum. During the 2019-20 school year our educators identified current DLCS standards being covered in 4 strands at each grade level K-12. The Technology Committee members are currently completing a gap analysis to determine next steps in meeting these standards. This could include professional development, materials, courses, and curriculum writing. With specific K-12 standards in the Computational Thinking and Computing Systems strands we see this as an opportunity to increase our offerings in these areas so that our students have exposure to these standards at each grade level. Currently our students have varied experiences that may include Hour of Code (K-8) each December, coding activities in library (K-5), and a Computer Science Pathway (9-12).

**C. Staffing**
MA DESE recommends one FTE instructional technology specialist per 60-120 instructional staff. Currently, we have one FTE Digital Learning Specialist to serve 303 instructional staff members. While this puts us below the state recommendation, we also fund 18 stipended Technology Integration Specialist positions to support educators when integrating digital learning and technology.

## Benchmark 3:   Technology Professional Development

### A.   Educational Technology Professional Development
There is no one size fits all model when it comes to Professional Development. Our goal is to offer a variety of experiences to meet the diverse needs of our educators. Online access has changed the types of professional development in which teachers may participate. The "sit and get" model is no longer the only option, educators can now choose from many relevant and applicable professional development models such as: face to face learning, online webinars and courses, PLC's, and the development of their own PLN's (personal learning networks). Our educators are teaching in a time that is considered the "age of abundant information" due to the instant access available to online resources. Not only can teachers collaborate and learn from district colleagues, but they can create a thriving global network where they are always growing as educators in the learning communities they have created. District offered professional development is evaluated through pre and post surveys asking educators to state their learning goals and interests and the format in which they learn best.

The following professional development related to digital learning and technology integration will be offered within the district:
Summer Technology Related Professional Development
- Educators will align adopted DLCS power standards to existing and new IPS Curriculum Documents.

- Explore new digital tools to incorporate into new and existing UbD units.
- Remote learning considerations and technology tools into existing and new units.

<u>During the School Year</u>
- Digital Learning Specialist will serve as a coach for support, modeling, and co-teaching throughout the district.
- Maintain Technology Specialist Committee to support faculty and staff for support and training in technology initiatives and integrating digital tools.
- PD Day Technology Opportunity
- Attend national and local conferences to stay current on educational technology

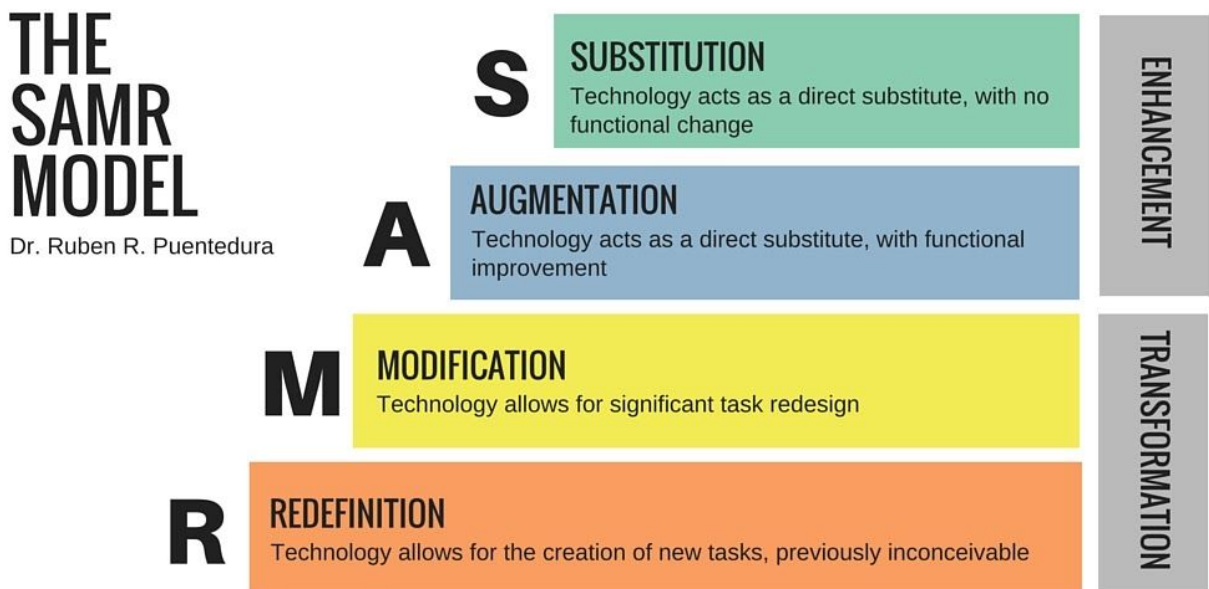<u>Microbadge Opportunities for Independent Learning</u>
- Yearly opportunities for technology related professional development including a microbadge pilot program. Digital Learning Specialist will provide building-based professional development specific to the needs of each building and/or department throughout the year.

<u>Online Tools for Learning</u>
- Develop and maintain a website managed by the Digital Learning Specialist and the technology committee: [www.ipstigertech.com](http://www.ipstigertech.com). This will serve as an online resource for district educators to support digital learning and technology integration.

**B. SAMR Model**

The SAMR Model was created by Dr.Ruben Puentedura to evaluate how technology impacts the activities related to teaching and learning in the classroom. This framework evaluates how greatly technology use amplifies and transforms the learning experience for students. This model assures that technology use is considered throughout the unit and lesson building, not as an addendum to replace a task with little to no improvement to the learning experience.



THE SAMR MODEL
Dr. Ruben R. Puentedura

**S** SUBSTITUTION
Technology acts as a direct substitute, with no functional change

**A** AUGMENTATION
Technology acts as a direct substitute, with functional improvement

ENHANCEMENT

**M** MODIFICATION
Technology allows for significant task redesign

**R** REDEFINITION
Technology allows for the creation of new tasks, previously inconceivable

TRANSFORMATION

## Benchmark 4:   Availability of Technology

### A.   Hardware and Internet Access

In accordance with our vision of technology's role in the classroom the district provides its constituents with emerging technologies that are appropriate to their position or grade level across K-12.

This could include:

| Educators | Students |
|---|---|
| Laptops (less than 4 years old) | Devices (chromebooks, iPads, laptops) |
| Interactive Whiteboards and Screens | Wireless Access |
| Printers (where required) | Google Accounts |
| Document Cameras | Hotspots for remote learning access |
| Wireless Access | |
| A variety of apps, add-ons and extensions (as needed) | |

### B. Access Outside of the School Day

The MS/HS Media Center is open before and after school on various days throughout the week in order for students to access computers, printers, chromebooks and video equipment.  The Ipswich Public Library has internet connected computers available during operating hours. The remote aspects of the IPS network are available to service the community 24/7, including various applications, VPN access, firewall, and content filtering.  In addition, the district provides both hotspots and devices on an as needed basis to allow access for users when not in the building.

### C. Staffing

The Ipswich Public Schools employs the following Technology Staff:
- 1 full-time (12 month) Director of Technology
- 1 full-time (12 month) Data Manager
- 1 full-time (12 month) Help Desk Manager and Applications Manager
- 1 full-time (12 month) Systems Administrator
- 1 full-time (10 month) Digital Learning Specialist

**Benchmark 5:  Virtual Learning and Communications**

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### A.  Virtual Learning
In order to personalize learning and provide our students with tools to maximize student achievement we use a variety of digital tools in a blended or virtual learning environment.

A Sampling of Current Virtual Learning Tools:
- Lexia Core 5 and PowerUP
- Exam View Pro
- Newsela
- NoRedInk and Quill
- Keyboarding Without Tears
- Quizlet
- Virtual High School
- Mystery Science
- Vocabulary.com
- Seesaw

### B.  Communications
The Ipswich Public Schools uses digital tools to effectively keep the community, families and staff informed with district information on our website at: [www.ipsk12.net](http://www.ipsk12.net) and through the use of Blackboard Connect. Each school and various departments maintain their own site pages within the district site. We are committed to using our website as a tool to provide the most up-to-date information in a user-friendly format and realize that with multiple individuals maintaining our current site we don't always offer this experience. We are in the process of brainstorming next steps as to how we can improve the user experience to our site, which may include a Learning Management System (LMS) to consolidate our communication and enhance the learning experience both in the classroom and remotely.

Educators are encouraged to share school and classroom information in both digital and printed format.  This may include email, blogs, websites, Google Classroom and school-based social media accounts.  It is our goal to maintain timely effective communications with district constituents providing up-to-date information for parents, students and staff.

In a remote learning environment, we have several websites available providing resources at every level for the community including tools for instruction, family support and students. This is often through a combination of a district remote learning website, individual school updates and teacher communication.

Current Communication Tools:
District and School websites
Email directory
District calendar
School newsletters and email blasts
Blackboard Connect

Various Twitter and Instagram accounts
Various teacher blog/websites
Digital magazine featuring summer professional development and awarded mini-grants
Zoom for Video Conferencing

## Benchmark 6:   Safety, Security and Data Retention

### A.  Digital Citizenship

When addressing digital citizenship standards we use a combination of embedding them into core curriculum through cross-disciplinary lessons and stand-alone lessons when necessary. Currently, we are in the process of identifying digital citizenship related to DLCS standards and where they are being taught, current curriculum and potential curriculum gaps.

### B.  Technology Policies

The technology policies in concert with the computer use agreements work together to ensure safe and ethical digital use by students and staff. The policies are reviewed periodically to address any necessary changes given the current academic environments.  The Student and Staff Computer Use Agreements are reviewed frequently (annually) by members of the technology committee. Each year adjustments if any are updated into the appropriate handbooks, allowing the policies to adjust for changes such as social media and remote learning. Currently we are exploring applications to educate both staff and students in best practices around modeling safe and responsible digital citizenship.

### C.  Firewalls

Ipswich Public Schools incorporates state of the art firewalls to ensure intrusion prevention. In addition to a hardware solution we also purchase a software subscription that works with the firewall to address any new threats that emerge.

### D.  Internet Access and Filters

We currently have internet access in 100% of our classrooms. In accordance with both state and federal law and our vision for technology use, all internal internet traffic is filtered for appropriate use. This includes paid subscription for content filtering which can be based on individual roles in the school community.

In addition to the firewall level of security listed above, as a Google for Education Partner we also leverage their protection as well. This can include more targeted filtering, safe-search, and age appropriate Google suite usage.  We are currently exploring additional protection for the IPS community when users are outside of the buildings as well.

### E.  Server, Data Storage and Backup Technology

We currently have a combination of physical and virtual server hardware. The majority of our server equipment is virtualized and connected to a SAN (Storage Area Network) with inherent redundancy. We currently use three physical servers as a platform for our virtualization. Our

storage is backed up with industry standard software to a local data domain. That data is then replicated to another location within the district.

### F. Recycling Retired Technology and Replacement

Ipswich strives to have state of the art technology in the hands of its students and staff and incorporates refresh cycles designed to achieve this goal. These cycles vary widely depending on the device and budget. In general, device life is measured in multiple years. As replacement devices are brought in, a question often arises about the disposal of retiring devices. Whenever possible we participate in a buyback program that allows us to recycle our retired devices and receive a credit towards the purchase of new technology. When not possible, Ipswich contracts with a device removal company to ensure safe and responsible disposal of equipment.

# APPENDIX

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**Explanation of Terms**
**Blended Learning:** The combination of traditional methods of instruction with digital tools
**DESE**: Department of Elementary and Secondary Education
**DLCS**: The Massachusetts Curriculum Framework for Digital Learning Computer Science
**LMS**: Learning Management System
**PLN**: Personal Learning Network
**SAMR**: A framework to evaluate and assess technology integration SAMR Model
**UBD**: "The Understanding by Design® framework (UbD™ framework) offers a planning process and structure to guide curriculum, assessment, and instruction." ASCD Whitepaper
**Agreements:**
Access to Digital Resources IJND
Empowered Digital Use Policy IJNDB
Social Media Policy IJNDD
Student EMail Access Grades 6-12 IJNDE
Staff Computer Use Agreement DRAFT(2020)
Student Computer Use Agreement (Draft in Progress)

## DLCS Documents

| Kindergarten | Grade 1 | Grade 2 |
|:---:|:---:|:---:|
| Grade 3 | Grade 4 | Grade 5 |
| Grade 6 | Grade 7 | Grade 8 |
| STEAM Grades 9-12 | | |
| Humanities Grades 9-12 | | |

## Supporting Documents
Technology Microbadges
Module Template
SAMR Model
UbD Template

## Resources
https://tech.ed.gov/files/2017/01/NETP17.pdf
SAMR Model: Courtesy:wikiversity.org

**Remote Learning with Technology**

When considering how to best utilize technology for remote learning support we will first look to the most recent guidance given to us from the Massachusetts DOE and evaluate technology recommendations that align with the vision statement in this plan. We realize that the shift to remote learning has forced us to quickly adapt and in many cases find, evaluate, learn, and promote new technologies to provide an enriching remote learning experience. We are committed to providing students and staff with the necessary hardware, digital tools, and support to effectively participate in the IPS community. At the same time we recognize the need to balance the quantity of digital tools against the capacity of the community to leverage and support those tools in a remote learning environment. Since remote learning is an ever-changing situation, as the learning environment shifts we will be flexible in our approach for promoting engaging student learning tools.