

Bedminster Township School Technology Plan

2025-2028



Prepared by Bedminster Technology Dept and the Educational Technology Committee

Table of Contents

Level I. District

Section 1.01 Vision

Section 1.02 District Infrastructure - Technology Readiness for Online
Assessment

Section 1.03 Teaching and Learning within the
District

Level II. School

Section 2.01 Technology Plan

(a) Goals, Objectives, & Strategies

(b) Action Plan (Activities/Responsibility/Timeline/Resources)

(c) Professional Learning

Appendix

A. Stakeholder Assurance

Level I. District

1.01 – Bedminster’s Vision for Digital Learning

Our students are growing up in a rapidly evolving digital environment where new technologies, tools, and ideas emerge continuously. The Bedminster School community recognizes that, when thoughtfully and strategically integrated, technology enhances instruction, supports innovative teaching practices, and expands opportunities for student learning. By leveraging modern digital resources, we aim to create engaging and personalized learning environments that enable all students to develop the knowledge and skills necessary for success in an increasingly connected world. In addition, the district is committed to promoting comprehensive cybersecurity awareness among students and staff, emphasizing responsible technology use, recognition of potential digital threats, and adherence to best practices for maintaining secure digital environments. Through this balanced and intentional approach, students are prepared not only to use technology effectively but also to do so safely, responsibly, and with informed awareness of cybersecurity principles.

To ensure our students can confidently use the technologies shaping their future, we are committed to providing a high-quality, forward-thinking education for every learner. In Bedminster, we strive to be:

- An innovative learning community that embraces the opportunities of a modern, technology-rich world
- A school where students develop critical thinking, creativity, digital literacy, and collaboration skills needed to thrive in a complex, interconnected, and rapidly changing global society
- A school where educators are lifelong learners, supported by strong leadership and empowered to grow as instructional innovators and educational leaders
- A school where teachers collaborate, share ideas, and use digital tools to streamline their work so they can focus more time on meaningful engagement with students

To remain responsive to the needs of our students in a constantly evolving world, we will continuously review, evaluate, and refine the tools, resources, and instructional practices we use. As new technologies and possibilities emerge, including advances in digital learning and artificial intelligence, we will thoughtfully assess their value and determine how best to support student learning. We will continue to seek guidance and feedback from our Educational Technology Committee to ensure that our decisions reflect the needs of our students and the priorities of our community.

1.02 – District Infrastructure

Our LAN and external bandwidths are each 1Gbps supported by an MDF and four IDF's layered with Extreme Fiber 5000 series switches. This provides 1Gbps at all network nodes. 70 Wireless Access Points are interconnected via an Extreme XIQ Cloud Server and are used throughout the school capable of 802.11n and 802.11ac. They provide wireless connectivity throughout the Bedminster School building, able to accommodate a high density of wireless devices in all areas of the building. There are 64 LaserJet networked printers and Xerox copiers provided throughout the building. All printing is centralized through a Windows Print Server. The Print Server allows easier management of the printers and copiers, which will be useful with our semi-paperless goal, and 99% of the classrooms are equipped with interactive whiteboards and document cameras for effective digital instruction. We have a STEM lab equipped with 2 interactive whiteboards, 12 i7 desktop workstations, and 12 mobile i7 laptops. All students are 1:1 with Dell 3120, Lenovo 500e, and HP 14 G8 Chromebooks. The Music Department has a

1:1 ratio of iPads for students.

Technology Readiness for Online Assessment

Please click on the Readiness gauges below for additional reports

Technology Readiness

Rating and Level of Need for Technical Assistance

Minimum Specs



Recommended Specs



Network Readiness

Rating and Level of Need for Technical Assistance



Device Readiness

Rating and Level of Need for Technical Assistance



1.03 – Teaching and Learning within the District

Technology Curriculum

Subject Area NJLS: Computer Science, Innovation, and Society NJSLS-CSIS with the new standards for the Grades K-4 curriculum updated in April 2026. The grade 5-8 updates will occur shortly thereafter. The new topic headlines for this content area are 8.1 Computer Science, 8.2 Engineering Design & Technology, and 8.3 Digital Literacy for grades K-4. Grades 5-8 curriculum will be updated in the summer of 2026 and now includes the older 8.1, 8.2, and 9.4 standards. It will move to the newer The New Jersey Students Learning Standards (NJSLS) standards that are expected to be adopted in 2026. The curriculum is aligned with the Computer Science Teacher Association (CSTA) standards and with the National Educational Technology Standards (NETS) from the International Society for Technology in Education (ISTE).

The courses taught in grades K-4 are called technology, and in grades 5-8, middle school, there are up to 2 different courses students take during different parts of the year that are currently titled: 1. Technology, and the other is titled 2. STEM and/or STEM/Robotics. Elementary (K-4) and middle school (5-8) students engage in cross-curricular and independent learning activities that are aligned with NJSLS under Computer Science and Design Thinking, and will move to the new title. New Jersey Student Learning Standards Computer Science, Innovation, and Society (NJSLS-CSIS) and under 8.1 Computer Science, 8.2 Engineering Design & Technology, and 8.3 Digital Literacy. The current NJSLS (2020) addresses the following areas: Computing Systems, Networks and the Internet, Impacts of Computing, Data & Analysis, and Algorithms & Programming.

For elementary students in the district, the new, proposed standards have been written into curriculum documents for NJSLS-CSIS, Computer Science, Innovation, and Society. The overarching themes include computer science programming, digital literacy, AI learning, data analysis, and engineering, design, and technology.

K-4 students take a technology course as one of their specials and meet with the teacher approximately 30 times per year, and students also use technology standards in their core classes. Students use a variety of digital tools, including Google Classroom, Suite (Docs, Slides, Sheets, Drawing, Forms), Microsoft Office, and keyboarding applications, including Typing Club. Students code in Code Monkey, Code.org, and other applications. Students work in IXL, Big Ideas, and Prodigy for mathematics and reading activities. Students work with Wixie, BrainPOP, and other applications to support content in core subject areas, reading, math, and writing. For K-8, the new NJSLS will address the following areas: Computing Systems, Networks and the Internet, Impacts of Computing, Data & Analysis, and Algorithms & Programming. Here are some highlights from the newly written curriculum for elementary students:

Grade 1- students are introduced to foundational technology concepts across multiple units. The AI Unit introduces students to the basics of artificial intelligence at an appropriate age level. The Coding and Computational Thinking unit builds early logic and sequencing skills. Physical computing is explored through the Coder Physical Computing unit, which gives students hands-on experience with simple programmable devices. Engineering Design and Technology

introduces the design process, and the Keyboarding unit focuses on building typing skills.

Grade 2- Second graders expand on foundational skills with multiple units. The Programming, Coding, and Debugging unit deepens computational thinking by introducing students to identifying and fixing errors in code. The AI and How the Internet Works unit connects artificial intelligence concepts to how information travels online. Digital Citizenship and Online Communities help students understand responsible online behavior. The Engineering Design unit continues building the design thinking process. A unit on Technology Terms covers hardware, software, problem solving, and logging into a computer.

Grade 3- Third graders take on more advanced topics across multiple units. The AI and Digital Citizenship unit combines artificial intelligence literacy with responsible technology use. The Hardware, Software, and How the Internet Works unit provides a deeper technical understanding of how devices and networks function. Keyboarding and Productivity introduces tools that connect typing skills to real-world productivity applications. The Magnet Car and Push Car Derby unit is a hands-on engineering unit where students apply physics and design principles to build and test vehicles. The Unplugged Programming, Binary, and Coding unit uses both block-based and text-based coding approaches, including offline "unplugged" activities to reinforce core concepts.

Grade 4- Fourth graders engage with the most complex and diverse set of units. Advanced Keyboarding/Digital Productivity builds on prior typing skills to include real productivity tool applications. The AI: How It Works, Machine Learning and Algorithms unit gives students a deeper look at how AI systems are built and make decisions. The Digital Citizenship, Places to Find & Google Earth (Latitude/Longitude) unit spans three lessons and incorporates geographic literacy using Google Earth. The virtual Makerspace unit on Simple Machines & Engineering Design applies engineering principles in a virtual environment. Physical Computing and the micro: bit introduces students to the BBC micro: bit, a programmable microcontroller used to build real devices. Students explore design, resources, products made, fixing, repairing, and how people react to these products. Finally, the Coding, Programming, Hardware, and Software unit is a comprehensive 10-lesson sequence that ties together the full scope of computer science concepts covered across the grade.

Programs and materials used in K-4: PCs/Chromebook, Windows/Chrome OS, Google Apps Suite, Microsoft Office, Code.org curriculum, Day of AI adapted teacher-made lessons, Google Earth, CodeMonkey, VEX Go, VEX 123, VEX AIM, TypingClub, Wixie, LEGO lessons, Raspberry PI, Desktop Computers/Laptops to build and put together, LEGOs, and other related materials.

Grades 5-8 Middle School

For grades 5-8, the revised curriculum was updated and meets the criteria for 8.1 Computer Science and 8.2 Design Learning. There will be new, revised updates to meet the new, proposed standards for 8.1, 8.2, and 8.3 in Computer Science, Innovation, and Society NJSLCSIS.

Grade 5- The 8th-grade Technology and STEM courses have students working on taking apart/putting back together computer desktops. Students also build and program computers using old computers/laptops that have been disassembled and connect them to monitors and other devices. Students continue to explore block and text-based coding activities through CodeMonkey and Code.org. Students work on developing programming skills through creating interactive games using hyperlinks through Google Slides, HTML, and other relevant tools and

applications.

Students engage in hands-on robotics and engineering experiences using VEX GO, a programmable robotics platform that bridges beginner and intermediate coding skills. Students build and code their own robots using both block-based, Scratch-like programming environments and text-based Python, developing a strong foundation in computational thinking, sequencing, and algorithmic design. Through the engineering design process, students plan, construct, test, and iterate on their robot builds, gaining practical experience with how physical systems respond to programmed instructions. These robotics units reinforce core Computer Science (8.1) and Engineering Design & Technology (8.2) standards by connecting coding concepts directly to real-world mechanical outcomes.

Students further explore engineering and physical science principles through two immersive virtual Makerspace units. In the Mars Rover unit, students design and build prototype rovers in a virtual environment, applying concepts of Newton's Laws, force, and speed as they test how their designs perform under simulated conditions. In the Roller Coaster unit, students construct and analyze a virtual roller coaster track, investigating the relationship between kinetic and potential energy as their designs move through different elevations and speeds. Additionally, students work with both physical and virtual micro: bits to create a variety of physical computing programs (step counter, alarm system, and coin flip simulator) to strengthen their understanding of sensors, inputs, outputs, and real-world programming applications.

Grade 6- The 6th-grade Technology and STEM courses develop students' understanding of robotics, engineering, and computational thinking through two major platforms: LEGO Mindstorms and LEGO SPIKE Prime. Working primarily in pairs, students begin by exploring the foundational question of what makes a robot a robot, building conceptual understanding before engaging with physical systems. Using LEGO Mindstorms, students program robots to respond to a variety of sensors, including ultrasonic, color, and touch sensors, developing an understanding of how input devices translate real-world data into programmable responses. Students in STEM work with LEGO SPIKE Prime, where they build and program a robot called TacoBot, applying more advanced engineering design principles and programming logic. These activities include line detection using the color sensor as well as integration of force and distance sensors, challenging students to refine their designs and code based on real-time testing and feedback. These hands-on collaborative units reinforce core standards in Computer Science (8.1) and Engineering Design & Technology (8.2) while deepening students' understanding of iterative design and sensor-based programming.

Students also engage in structured computational thinking activities through Carnegie Mellon's CS2N platform, completing a series of progressive coding challenges that build problem-solving and programming skills. Sphero robotics units introduce students to key programming concepts, including refactoring and conditional statements, reinforcing the idea that efficient, readable code is a hallmark of strong computational thinking. In addition, students work independently with both physical and virtual micro: bits to complete a variety of physical computing projects, including a clap light program, a light sensor activity, and a rock-paper-scissors simulator. Students also practice debugging skills by identifying and correcting broken Python code, and they apply text-based programming to create personalized outputs, such as displaying their own name.

Grade 7- The 7th-grade Technology and STEM/Robotics courses offer a variety of learning experiences for students. Students explore the field of artificial intelligence through a unit on machine learning, pattern recognition, and AI applications. Students learn how machine learning models are trained to identify patterns and make decisions, and they apply this understanding to complete an independent AI project on a topic of their own choosing. For their

projects, students present a real-world problem, propose an AI-based solution, and analyze the pros, cons, and future implications of that technology. Past student topics have included AI applications for wildlife conservation, assistive technology for the visually impaired, improving student access to information, and visual recognition systems for security purposes, reflecting the creativity students bring to this unit. Students also complete a climate change animation project in which they research climate-related issues and use digital tools to create an original animated presentation, combining scientific literacy with creative communication skills.

In STEM/robotics, students are introduced to the VEX IQ platform across virtual and real robot environments. In the virtual robotics platform, students complete a series of structured challenges, including a virtual maze, disc pick-up tasks, and a line follower activity, building foundational programming logic before transferring those skills to physical robots. With the real VEX IQ robot, students apply the optical sensor using hue detection for line following, complete the bumper sensor driving challenge, and navigate the maze challenge using all available sensors. Students also build and attach simple claws and custom attachments to their robot, learning how mechanical design decisions directly impact programming requirements. A key skill developed throughout these units is the ability to switch between block-based and text-based Python coding using switch blocks, giving students the flexibility and confidence to work in both environments and deepening their overall understanding of how code structure translates across programming platforms. Together, these experiences across robotics, artificial intelligence, and digital media give seventh graders a comprehensive and forward-looking technology education grounded in real-world relevance and critical thinking.

Grade 8- The 8th grade Technology and STEM/Robotics courses have students learn advanced coding concepts through a variety of programming activities including code.org, Students create apps for mobile devices through MIT's App Inventor program and develop a prototype for an app to solve a real-life problem related to solving a problem related to climate change in NJ. Students use a variety of technology tools, including spreadsheets and presentations, to complete a real-life stock market project. Students will build different robots and use engineering design principles with robotics. They also complete computer programming fundamentals through VEX Virtual Robotics activities using both Python (text-based) and block-based programming concepts. The teacher for the course is a certified Robotics Instructor for the EV3 robot and for VEX Virtual Robotics.

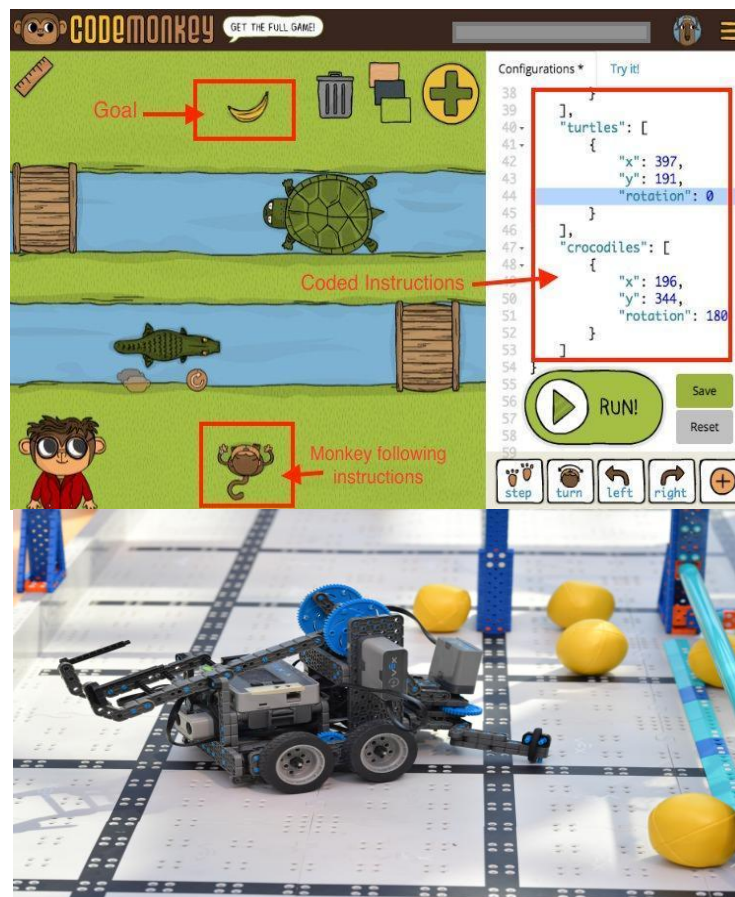
Students engage in advanced robotics engineering through the VEX IQ platform, working to design, build, and program sophisticated robots equipped with arms, claws, gears, and active intake motor groups. Students apply gear ratios and mechanical principles to optimize their robot's performance across a series of increasingly complex challenges. All major sensor types are integrated throughout these units, including distance, optical, touch, and bumper sensors, giving students a comprehensive understanding of how multi-sensor systems work together to enable autonomous and semi-autonomous robot behavior. Collaborative project-based units include Robot Soccer, Stacking Cubes, and a Board/Cube/Pin Sweeper challenge, each designed to test a different combination of engineering design, programming logic, and sensor integration. The Sweeper unit is particularly demanding, as students must program their robot to clear a factory floor of all objects without driving off the edges of the board, which is a challenge made more difficult by the absence of any perimeter boundary, requiring precise sensor calibration and a thoughtful programming strategy. Students also utilize a virtual robotics platform that introduces switch code functionality, allowing them to fluidly move between block-based and text-based programming environments and reinforcing the connection between visual logic and text-based Python coding. Through these experiences, eighth graders develop advanced competencies in mechanical engineering, computational thinking, and iterative design that reflect real-world robotics and engineering practices. Other areas of

computer programming, digital citizenship, engineering/design, and AI learning projects take place during the courses.

Bedminster Robotics Club (middle school)- The robotics club formerly participated in First Inspires and competed in FLL tournaments. The teams have won first place in the programming section of the tournament and placed first for the best mechanically designed robot.

The club has continued to grow in numbers annually, averaging close to 20 members in the past 3 years. This past year 3 teams represented Bedminster School at the VEX IQ robotics qualifying tournament. This and last year's teams successfully advanced from the regional level to the New Jersey state tournament based on their strong engineering, skills, and autonomous programming tasks that they solved with their teammates. In early March of 2026, Team FLBK (8234B) won the judge's award at the state tournament. This team was one of a few out of hundreds of programs to receive such recognition on a competitive stage. The program continues to attract diverse members of students and is a thriving school club.

Computer Club Bedminster School's computer club has students involved in building and programming through Minecraft for Education. Students also work on understanding components of a computer, building and exploring individual interests related to computer science, using micro: bits to create projects, and learning HTML code to build a website.



Level II. School

2.01 – Technology Plan

Goal 1: Bedminster School students, teachers, and staff will use virtual learning technology to communicate effectively with the global community.

Objective(s): Increase the community's awareness of Bedminster School's place in the technology community

Action Plan - Goal 1

Activities	Individual(s) Responsible	Resources	Timeline
The Staff will use online communication like Facebook, Instagram, the school website, Google Classroom, and Class Dojo to keep the community up to date with School Events and Activities.	Administration, Staff	Facebook, School Website, Google Classroom, Class Dojo	09/2025 – 06/2028
As of 8/2025, Bedminster Township School ceased using Teacher Pages and opted to use Google Classroom for Parent communication	All Staff	NA	NA
The Student Information System, Genesis, will be utilized more to connect with students and parents because it is cloud-based to allow more streamlined access for scheduling conferences and registration.	Technology Manager, School Principals, School Secretaries	Genesis	09/2025 – 06/2028

Goal 2: Bedminster School will add more STEM-infused projects to current courses

Objective(s): We strive to be a benchmark for innovation and excellence in contemporary education, whose students are prepared to excel in a complex, interconnected, changing world.

Action Plan - Goal 2			
Activities	Individual(s) Responsible	Resources	Timeline
Further school-wide initiative related to school-wide computer coding development was completed in the technology course.	Technology Manager, Technology Teachers, Director of Instruction	Code Monkey	09/2025 – 06/2028
Expanding the robotics club to a second group of students who are in 4th through 6th grade, and exploring the VEX Robotics, along with further development with EV3 Robotics, if BoE approves.	Technology, Mathematics, and Science Teachers	Robotics club	09/2025 – 06/2028

Professional Learning

PL Goal No.	Goals	Identified Group	Rationale/Sources of Evidence
1	To provide support for students to reach their highest level of proficiency and maintain an environment that promotes high academic achievement in all content areas	All certificated staff/building administration	Based on current achievement data, we will continue to utilize multiple measures to track and enhance programs and achievement, analyze in-house and standardized assessment data to identify trends and inform instruction, support staff embedding reading and writing activities such as DBQs and Cross-Cutting Projects within the MS curriculum, and integrate writing opportunities across content areas, including the infusion of cursive handwriting, Asian American and Pacific Islander and Hispanic learning initiatives throughout the curriculum.
2	Strengthen the ability of the staff to meet their goals by working directly with their supervisors and peers.	All certificated staff/building admin / central office/ any other areas	As a state mandate and best practice, through collaborative meetings of staff and supervisors, feedback is collected during staff annual summative meetings and other meetings focused on supporting previous and new goals in the upcoming school year.
3	To enhance awareness of citizenship and well-being by building a positive environment and culture that enhances well-being and responsibility	All staff, including Technology staff, PTO, and BoE	Through School Community feedback collected early spring, the need to integrate digital literacy ... Based on last year's needs, the distribution of 'Best Practices in AI' Sheets for Staff and Students was distributed and is being used. We will reassess its effectiveness and revise as needed.

Professional Learning Activities

PL Goal No	Initial Activities	Follow-up Activities (as appropriate)
1	Research and provide meaningful professional development through the use	Based on student data, we will research best practices and read professional literature related to implementing grade and age-appropriate civics instruction

	of faculty meeting time, PLC, in-service days, and outside workshops	<p>Work in PLCs to track student progress via the use of DIBELS, IXL, i-Ready, IXL, and DBQs and Benchmark Advance</p> <p>Teachers of content areas will work collaboratively to analyze data to make instructional decisions</p> <p>The Superintendent will present information regarding progress made on district goals at a public meeting of the BoE twice a year</p>
2	Provide meaningful professional development through in-service days, professional development activities, and PLCs.	<p>Based on the needs of teachers, activities may include:</p> <p>Teachers of content areas will work on their individual goals related to summatives from the year before and/or district goals.</p> <p>Teachers will implement strategies and use resources related to district goals, including but not limited to IXL, Rethink, Newsela, inclusive education training, No Red Ink, reading programming, Big Ideas Math, iReady, DBQ/ TCI, Sound Start, NGSS activities, and other programs.</p>
3	Digital Literacy/Artificial Intelligence	The Ed Tech Committee will continue to meet and review the needs of staff, offer PD, and, as new staff members get hired, mandate their training around AI and other technology needs.

PD Required by Statute or Regulation

State-mandated PD Activities (add expenses if known) attach any documentation necessary (quotes, website information, etc.)	
1 - Ensure compliance with all NJDoE and federal required mandates. The district provides 3 days during the school year dedicated to teacher-directed professional learning, abiding by district policies and required mandates.	
2 - State-mandated best practices, PD, and policy review are included, along with district-mandated training, including ELA program training by an outside vendor in the 2025-2026 school year. Refining implementation of programs and professional development provided the previous year, including Newsela, IXL, No Red Ink, and inclusive practices.	
3 - District-mandated training includes: Add yearly Cybersecurity Training with quarterly Email Phishing Security Testing to improve employee awareness and provide metrics and report tracking.	

Budget			
Goal	Activity	Funding Source (Federal/State/Private/District)	Amount
2	Continue Xerox Managed Printing Services and Copier Maintenance Contract.	District	\$2,776/month
3	Genesis – Student Information System Continued widespread use of collaborative technologies, such as Google Apps for Education.	District	\$13,377.00 annually
3	Use of School Facebook and Instagram	District	\$0 – No cost to District
4	VEX Robotics and/or additional LEGO robotics accessories, including motors and replacement parts. Practice kits for annual projects from FIRST Robotics.	Percentage paid by PTO Grant, District, and other potential grant sources, such as Title IV	\$1,500/annually

Stakeholder Assurance

I agree with the contents in this educational plan, and the assurance that I will be involved in the implementation of this Technology Plan for Digital Learning.

Involvement in the implementation of this Plan may include: reviewing the progress of meeting the goals and objectives, being responsible for completing one or more activities in the action plan, and participating in the revisions of the plan.

Stakeholder Name	Stakeholder Title	Signature
Dr. James Puglia	Teacher of Technology	
Gary Steinert	Technology Assistant	
Kevin Pickett	Technology Manager, Technology Committee Chair	