

Beecher Road School has always used technology differently than other schools because the emphasis has been on student creativity over consumption of content. Students are encouraged to use technology as a tool to share their knowledge in original and innovative ways. The technology program provides an important foundation of technology skills for all Beecher Road School students.

Beecher Road School has two full time technology teachers. These teachers provide curriculum development, instruction, professional development, and technical support for the school and district. The technology teachers are assisted by one part-time teaching assistant. The Technology team works closely with the members of the Library Media staff to develop, support, and extend the technology and information literacy skills of our students.

Students in kindergarten, first, and second grades engage in curriculum-related technology activities designed by their classroom teacher, technology teacher, and/or library media specialist. During the primary grades, students become engaged in a number of developmentally appropriate technology projects. Technology is used for problem-solving activities, creating simple publishing projects, and painting and drawing.

As students move into grades three and four, they continue to develop storytelling and research skills through multimedia projects and slideshow presentations. They also use programming resources to enhance their abilities to identify creative solutions to problems while demonstrating both their technology expertise and their knowledge of mathematical concepts.

Fifth grade and sixth grade students experience technology embedded in their homeroom studies. Members of the library and technology staff support, instruct, and enhance the use of technology in the classroom. This embedded instruction takes place in small groups, whole class, and in homeroom or the library and technology centers.

Elementary students learn how to create multimedia presentations and how to use the Internet as a tool for basic research. They engage in a variety of interesting technology projects, including databases, computer animation, coding, word processing publications, and other technology topics. Students also have access to subscription-based online reference materials and software simulations.

The following presents technology expectations for each of the elementary grades. Since the recent release of these standards, the curriculum is being modified to meet the new expectations and we expect a more complete implementation of the standards during the 2018-19 school year.

These expectations are based on the 2016 ISTE National Educational Technology Standards:

- **Innovative Designer:** Students use a variety of technologies within a design process to identify and solve problems by creating new, useful, or imaginative solutions.
- **Creative Communicator:** Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals.
- **Knowledge Constructor:** Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

- **Computational Thinker:** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
- **Digital Citizen:** Students recognize the rights, responsibilities and opportunities of living, learning, and working in an interconnected digital world. They act and model in ways that are safe, legal, and ethical.
- **Empowered Learner:** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **Global Collaborator**: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Elementary Student Technology Expectations

Kindergarten

Students in kindergarten will become a/an:

Innovative Designer

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Global Collaborator

First Grade

Students in first grade will become a/an:

Innovative Designer

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Global Collaborator

Second Grade

<u>Innovative Designer</u>

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Global Collaborator

Third Grade

Innovative Designer

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Fourth Grade

Innovative Designer

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Global Collaborator

Fifth Grade

Innovative Designer

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Global Collaborator

Sixth Grade

Innovative Designer

Creative Communicator

Knowledge Constructor

Computational Thinker

Digital Citizen

Empowered Learner

Kindergarten

Students in kindergarten, first, and second grades engage in curriculum-related technology activities designed by their classroom teacher, technology teacher, and/or library media specialist. During the primary grades, students become engaged in a number of developmentally appropriate technology projects. Technology is used for problem-solving activities, creating simple publishing projects, and painting and drawing.

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- **Computational Thinker:** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
- **Digital Citizen:** Students recognize the rights, responsibilities and opportunities of living, learning, and working in an interconnected digital world. They act and model in ways that are safe, legal, and ethical.
- **Empowered Learner:** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.
- **Global Collaborator**: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Students in kindergarten will become a/an:

Innovative Designer

- Use technology to combine media such as text and graphics (with assistance) to communicate ideas.
- Use basic digital drawing tools, colors, and shapes to illustrate or communicate ideas.
- Use technology to facilitate letter recognition and vocabulary development.
- Use technology to facilitate reading, writing, listening, and speaking.
- Use pictures to support emergent writing and to communicate concepts or information learned.

Creative Communicator

• Collaborate and interact with peers to create a digital project communicating curriculum ideas.

- Create original works or responsibly remix digital resources into new creations (with assistance).
- Publish or present using audio content that customizes the message for the intended audiences.

Knowledge Constructor

- Use teacher-selected resources to enhance and support the curriculum.
- Explore issues and problems while pursuing answers and solutions through coding.

Computational Thinker

- Students use technology to:
 - o enhance or finish projects.
 - explore and demonstrate number sense.
 - o explore spatial relations and shape recognition.
 - o practice sequencing, patterns, and symmetry.

Digital Citizen

- Respect each other's work.
- Use resources and technology as directed.

Empowered Learner

- Log in to network account and software using name and password (with assistance).
- Identify the basic components of the computer: monitor, keyboard, mouse, headphones, microphones, and printers.
- Use the mouse appropriately in programs.
- Identify and find letters/numbers on the keyboard.
- Be able to use and navigate the Dock.
- Ask for assistance when needed; assist peers when appropriate.

- Use technology collaboratively when working with classmates to examine issues and problems from multiple viewpoints.
- Contribute constructively in partnership and teams, assuming various roles and responsibilities to work effectively toward a common goal.

First Grade

Students in kindergarten, first, and second grades engage in curriculum-related technology activities designed by their classroom teacher, technology teacher, and/or library media specialist. During the primary grades, students become engaged in a number of developmentally appropriate technology projects. Technology is used for problem-solving activities, creating simple publishing projects, and painting and drawing.

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Creative Communicator: Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats, and digital media appropriate to their goals.

Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. **Digital Citizen:** Students recognize the rights, responsibilities and opportunities of living, learning, and working in an interconnected digital world. They act and model in ways that are safe, legal, and ethical.

Empowered Learner: Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Students in first grade will become a/an:

Innovative Designer

- Use technology to express ideas learned through curriculum studies using different media elements that include text, graphics, and sound (with moderate assistance).
- Use more advanced drawing tools, colors, and shapes.
- Make appropriate choices from the tool palette.

- Collaborate and interact with peers to create a digital project communicating curriculum ideas.
- Create original works or responsibly remix digital resources into new creations.
- Publish or present content that customizes the message for the intended audiences.

Knowledge Constructor

- Within teacher-selected resources, explore information on various curriculum topics.
- Explore issues and problems while pursuing answers and solutions through coding.

Computational Thinker

- Introduce basic coding skills through visual block style coding (with assistance).
- Use technology to gather information, solve problems, and complete projects (with assistance).
- Use technology to explore and develop math skills (i.e., counting, addition, subtraction, and measurement).

Digital Citizen

- Respect their account and peer accounts, equipment, devices, and student work.
- Respect and maintain shared technology resources.

Empowered Learner

- Log in to and log out of network account and software with minimal assistance.
- Use the mouse, keyboard and peripherals (i.e., headphones) appropriately.
- Begin using two hands on the keyboard.
- Launch and quit applications with minimal assistance.
- Locate, open, and save files on the network with minimal assistance.
- Ask for assistance when needed; assist peers when appropriate.
- Transfer knowledge of basic operations to new applications .

- Use technology collaboratively when working with classmates, to examine issues and problems from multiple viewpoints.
- Contribute constructively in partnership and teams, assuming various roles and responsibilities to work effectively toward a common goal.

Second Grade

Students in kindergarten, first, and second grades engage in curriculum-related technology activities designed by their classroom teacher, technology teacher, and/or library media specialist. During the primary grades, students become engaged in a number of developmentally appropriate technology projects. Technology is used for problem-solving activities, creating simple publishing projects, and painting and drawing.

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Knowledge Constructor: Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts, and make meaningful learning experiences for themselves and others.

Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. **Digital Citizen:** Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world. They act and model in ways that are safe, legal, and ethical.

Empowered Learner: Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences.

Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Students in second grade will become a/an:

Innovative Designer

- Use technology to express ideas using different media elements such as text, images, sound, and voice to express knowledge and to entertain.
- Begin to locate, select or create appropriate images to enhance curriculum projects.
- Begin to learn image-editing techniques such as selecting and resizing.

Creative Communicator

- Use technology to type text related to curriculum.
- Use technology to develop a multimedia presentation through a sequence or graphic organizer.

Knowledge Constructor

Use teacher-selected websites to locate and access information related to curriculum.

- Introduce basic keyword search techniques.
- Introduce the concept of citing sources.

Computational Thinker

- Introduce strategies to collect information, solve problems, and complete projects.
- Develop further understanding of basic programming and coding commands.
- Use technology to explore and develop math skills (i.e., counting, addition, subtraction, and measurement).

Digital Citizen

- Respect their account and peer accounts, equipment, devices, and student work.
- Respect and maintain shared technology resources.
- Understand how technology can impact oneself and others.

Empowered Learner

- Use two hands on the keyboard with minimal reminders.
- Introduce "home row" position and the shift key to capitalize letters and use simple punctuation.
- Locate, open, print, and save files (with appropriate filenames) with minimal assistance.

- Use technology collaboratively when working with classmates to examine issues and problems from multiple viewpoints.
- Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

Third Grade

As students move into grades three and four, they continue to develop storytelling and research skills through multimedia projects and slideshow presentations. They also use programming resources to enhance their abilities to identify creative solutions to problems, while demonstrating both their technology expertise and their knowledge of mathematical concepts.

The following presents technology expectations for each of the elementary grades. These expectations are based on the 2016 ISTE National Educational Technology Standards:

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Computational Thinker: Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. **Digital Citizen:** Students recognize the rights, responsibilities, and opportunities of living, learning, and working in an interconnected digital world. They act and model in ways that are safe, legal, and ethical.

Empowered Learner: Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Students in third grade will become a/an:

Innovative Designer

- Use various graphics, styles, and layouts to enhance expression and communicate information.
- Locate, select, and use appropriate images (i.e., scanned photographs, drawings, clipart).
- Develop image-editing techniques (selecting, resizing, copying and pasting).

- Use technology for creative and expressive writing using basic formatting techniques and tools (select text to delete, copy, paste; indent, spacing, alignment, alter font/style).
- Use technology to create multimedia presentations with text, graphics, sound, and animation.
- Begin to use electronic spell check or predictive text.
- Develop strategies to locate information from appropriate Internet sources.
- Navigate teacher selected websites with assistance.
- Develop and practice paper and digital note-taking strategies.
- Begin to cite information and image sources.

Knowledge Constructor

- Use appropriate search engines and databases to search for information.
- Develop strategies for evaluating print and online sources.
- Take notes and cite sources appropriately.

Computational Thinker

- Continue to develop strategies to collect information, solve problems, and complete projects.
- Use basic commands to create procedures that demonstrate or illustrate an idea.
- Develop further understanding of programming and coding commands.

Digital Citizen

- Respect others' account privacy and work.
- Practice responsible and appropriate use of print and online resources.
- Use resources in a manner that is safe, mindful of acceptable student conduct, and respectful of the privacy of other users.

Empowered Learner

- Type using all fingers in home row position; begin to incorporate other keys such as symbols and numbers.
- Begin to use a variety of shortcut keystroke commands (e.g., to save, or to navigate between multiple programs simultaneously on the computer).
- Be aware of basic file management techniques (organize, rename, delete files).
- Learn to plug in and adjust the settings of external equipment such as headphones and microphones.

- Use collaborative technologies to work with peers and community members to examine issues and problems from multiple viewpoints.
- Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

Fourth Grade

As students move into grades three and four, they continue to develop storytelling and research skills through multimedia projects and slideshow presentations. They also use programming resources to enhance their abilities to identify creative solutions to problems, while demonstrating both their technology expertise and their knowledge of mathematical concepts.

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Global Collaborator: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Students in fourth grade will become a/an:

Innovative Designer

- Create interactive presentations using a variety of media to convey curriculum concepts.
- Demonstrate artistic awareness in presentations to communicate information or express ideas.
- Use technology resources for self-expression through original work.

Creative Communicator

- Continue to develop technology skills using tools to import graphics from various applications.
- Insert/edit/reposition graphics in documents and presentations.
- Use a variety of media that may include text, graphics, scanned images, and sound.
- Engage and collaborate with others via cloud-based documents.

Knowledge Constructor

• Continue to use appropriate search engines and databases to search for information.

- Apply advanced search techniques such as Boolean operators to search for information.
- Develop strategies for evaluating print and online sources.
- Continue to take notes and cite sources appropriately.

Computational Thinker

- Plan and execute strategies to guide research and complete projects.
- Gather and analyze data to find solutions and make informed decisions.

Digital Citizen

- Use resources appropriately while respecting the privacy of other users.
- Cultivate and manage their digital identity and reputation and be aware of the permanence of their actions in the digital world.
- Understand and respect the rights and obligations of using and sharing others' digital work.

Empowered Learner

- Type using all fingers in home row; begin to use other keys such as symbols and numbers.
- Begin to use a variety of shortcut keystroke commands (e.g., to save, or to navigate, etc.).
- Be aware of basic file management techniques (organize, rename, delete files).
- Independently plug in and adjust the settings of external hardware (e.g., headphones, scanners).

- Use collaborative technologies to work with others, including peers, experts, or community members to examine issues and problems from multiple viewpoints.
- Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- Explore local and global issues and use collaborative technologies to investigate solutions.

Fifth Grade

Fifth grade and sixth grade students experience technology embedded in their homeroom studies. Members of the library and technology staff support, instruct, and enhance the use of technology in the classroom. This embedded instruction takes place in small groups, whole class, and in homeroom or the library and technology centers.

The following presents technology expectations for each of the elementary grades. These expectations are based on the 2016 ISTE National Educational Technology Standards:

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Students in fifth grade will become a/an:

Innovative Designer

- Use a variety of media that may include text, graphics, digital images, videos, and sound to communicate and express ideas.
- Use image-editing techniques to effectively present information.
- Continue to use basic principles of design and typography (text formatting techniques) to enhance ideas or to persuade.

- Use technology for creative and expository writing using appropriate publishing tools to publish work to a wider audience.
- Use technology to create a multimedia presentation that incorporates text, graphics, digital images, video, and sound.

Knowledge Constructor

- Locate, organize, analyze, evaluate, synthesize, and use information from a variety of sources and media.
- Follow proper citation guidelines.
- Complete an inquiry-based research project.
- Use the Internet to consult experts worldwide for researching a topic or to collaborate with other students on research.

Computational Thinker

- Plan and execute strategies to effectively guide research and complete projects.
- Introduce basic use of a spreadsheet to analyze, calculate, and store data.

Digital Citizen

• Use resources in a manner that is safe, mindful of acceptable student conduct, and respectful of the privacy of other users.

Empowered Learner

- Type regularly with all fingers.
- Continue to use keyboard shortcuts and quick commands.
- Be comfortable with all aspects of file management (saving files, renaming and deleting files, copying files, etc.) including accessing and sharing files remotely.
- Plug in and use external equipment such as headphones.

- Use collaborative technologies to work with others, including peers, experts, or community members, to examine issues and problems from multiple viewpoints.
- Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- Explore local and global issues and use collaborative technologies to investigate solutions.

Sixth Grade

Fifth grade and sixth grade students experience technology embedded in their homeroom studies. Members of the library and technology staff support, instruct, and enhance the use of technology in the classroom. This embedded instruction takes place in small groups, whole class, and in the homeroom or the library and technology centers.

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- **Computational Thinker:** Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions.
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- **Empowered Learner:** Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals informed by the learning sciences.
- **Global Collaborator**: Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally.

Students in sixth grade will become a/an:

Innovative Designer

- Use a variety of media that may include text, graphics, digital images, videos, and sound to communicate and express ideas.
- Use image-editing techniques to effectively present information.
- Continue to use basic principles of design and typography (text formatting techniques) to enhance ideas or to persuade.

- Use technology for creative and expository writing with appropriate publishing tools to publish work to a wider audience.
- Use technology to create a multimedia presentation that incorporates text, graphics, digital images, video, and sound.

Knowledge Constructor

- Locate, organize, analyze, evaluate, synthesize, and use information from a variety of sources and media.
- Follow proper citation guidelines.
- Complete an inquiry-based research project.
- Use the Internet to consult experts worldwide for researching a topic or to collaborate with other students on research.

Computational Thinker

- Plan and execute strategies to effectively guide research and complete projects.
- Introduce basic use of a spreadsheet to analyze, calculate, and store data.
- Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

Digital Citizen

• Use resources in a manner that is safe, mindful of acceptable student conduct, and respectful of the privacy of other users.

Empowered Learner

- Type regularly with all fingers.
- Continue to use keyboard shortcuts and quick commands.
- Be comfortable with all aspects of file management (saving files, renaming and deleting files, copying files, etc.) including accessing and sharing files remotely.
- Plug in and use external equipment such as headphones.

- Use collaborative technologies to work with others, including peers, experts, or community members to examine issues and problems from multiple viewpoints.
- Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- Explore local and global issues and use collaborative technologies to investigate solutions.