

Educational Technology

**Archdiocese of Louisville
Technology Curriculum 2016**

Archdiocese of Louisville Technology Curriculum K-8, 2016

The Archdiocese of Louisville strives to support schools in developing inquisitive, creative, resourceful thinkers; informed citizens; effective problem-solvers; groundbreaking pioneers; and visionary leaders. Pope Francis, in his encyclical *Laudato Si*, states, “If an artist cannot be stopped from using his or her creativity, neither should those who possess particular gifts for the advancement of science and technology be prevented from using their God-given talents for the service of others.”¹ Our purpose is to foster the excellence that flows from the ability to use today’s information, tools, and technologies effectively and a commitment to lifelong learning – all necessary to be active, creative, knowledgeable, and ethical participants in our global society.²

We believe that students can no longer learn everything there is to know while in school or within their lifetimes. Their learning must focus on how to identify, retrieve, evaluate, and use information for a variety of purposes; communicate effectively using appropriate technologies and acceptable social guidelines; and become good digital citizens who practice safety and respect the privacy of others.³ “The digital world can be an environment rich in humanity; a network not of wires but of people,” Pope Francis stated in his 2014 message to the 48th World Communications Day.⁴

We further believe that all students can learn and that teachers must look for ways to incorporate technology into the learning environment to differentiate learning for students. Teachers must provide engaging and empowering learning experiences both in and out of school that prepare students to be active, creative, knowledgeable, and ethical Catholics in our global society.

Technology is a powerful enabler of learning but teachers must not abdicate their role in facilitating learning. They must support their students’ engagement with technology resources for learning, connecting the curriculum with the technology, highlighting important subject matter, encouraging students to use full explanations and 21st century skills and encouraging students to be responsible for their own learning.⁵ Teachers must provide meaningful feedback to students through assessments powered by technology. The technology that enables connected teaching is available now. We must introduce connected teaching into our archdiocesan schools as soon as possible so that students may experience opportunities to customize their learning. Teachers can model lifelong learning as they use more and more technology in their instruction.

This curriculum based on the 2016 ISTE Standards for Students provides a springboard for teachers to implement technology tools that facilitate and support learning in ways that were not available before. It is incumbent on us to use the technology available to provide the best learning environment possible for all students so that they can take their places as developing inquisitive, creative, resourceful thinkers; informed citizens; effective problem-solvers; groundbreaking pioneers; and visionary leaders.

¹Pope Francis. “Laudato Si’”. Vatican City, Italy: May 2015, p. 38.

²U.S. Department of Education, Office of Educational Technology. “Transforming American Education, Learning Powered by Technology”. Alexandria, VA: Education Publication Center, November 2010, p. 1.

³U.S. Department of Education, Office of Educational Technology. “Transforming American Education, Learning Powered by Technology”. Alexandria, VA: Education Publication Center, November 2010, p. 13.

⁴Pope Francis. “48th World Communications Day Letter”. Vatican City, Italy: January 2014, p.1.

⁵U.S. Department of Education, Office of Educational Technology. “Transforming American Education, Learning Powered by Technology”. Alexandria, VA: Education Publication Center, November 2010, p. 51.

**Archdiocese of Louisville
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Kindergarten Through Grade Two**

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. Students:	
ISTE	Archdiocesan Educational Objectives
a. articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.	will work with teachers to set learning goals using technology will reflect on the differences in using technology and not using technology
b. build networks and customize their learning environments in ways that support the learning process.	will build learning networks by sharing original stories. (2a, 2007)
c. use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	will be polite as they share with each other in group projects. (5b, 2007)
d. understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.	<p>will:</p> <ul style="list-style-type: none"> • turn the computer on and log in. • get online • take care of the technology equipment at school. • click, drag, use the mouse or touchscreen, and find specific keys on the keyboard. • name and save a document. • adjust the volume on their computer. (6a, 2007) <p>will:</p> <ul style="list-style-type: none"> • open a web browser and use a website. • change a picture or font style and color. • use a program such as Paint to create a work of art. • record their voices into a presentation. (6b, 2007) <p>will:</p> <ul style="list-style-type: none"> • adjust the volume on their computer. • plug headphones into the computer. • quit and restart a program that is not working. • refresh a website. (6c, 2007) <p>will tell differences between computers, laptops, iPads, and software programs and apps. (6d, 2007)</p>

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Digital Citizen

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

Students:

ISTE	Archdiocesan Educational Objectives
<p>a. cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.</p>	<p>will be polite as they share with each other in group projects.</p> <p>will:</p> <ul style="list-style-type: none"> • identify appropriate online manners. • talk about cyber bullying. • work with their teachers and class on a social networking site such as Edmodo. (5b,5c, 2007) <p>will receive permission from a parent or teacher before sharing any information online. (5a, 2007)</p>
<p>b. engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.</p>	<p>will identify the types of information that should and should not be shared online. (5a, 2007)</p> <p>will use websites such as www.brainpopjr.com, Disney Surf Swell Island, and Net Smartz Kids and iSafe to learn about Internet safety. (5a, 2007)</p> <p>will notify an adult if they experience any inappropriate material online. (5a, 2007)</p> <p>will protect their passwords from others. (5a, 2007)</p> <p>will place appropriate pictures online. (5d, 2007)</p> <p>will work with others to promote being a good digital citizen. (5d, 2007)</p>
<p>c. demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.</p>	<p>will explain the differences between their work and the work of other people. (5a, 2007)</p>
<p>d. manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.</p>	<p>will receive permission from a parent or teacher before sharing any information online. 5a, 2007)</p> <p>will work together to use technology to make a presentation using a program such as PowerPoint or Prezi. (2d, 2016)</p>

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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. Students:

ISTE	Archdiocesan Educational Objectives
<p>a. plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.</p>	<p>will create a report or presentation from information found using technology. (3a, 2007)</p> <p>will add information to a spreadsheet and be able to explain the data.</p> <p>will watch and evaluate videos on sites such as KET Encyclomedia.</p> <p>will locate information on the Internet using search engines such as Google, www.kidrex.org, and www.kidsclick.org and bookmark specific websites. (3b, 2007)</p>
<p>b. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.</p>	<p>will research topics, answer webquests, create digital stories, etc. (3c, 2007)</p> <p>will record their sources to cite when presenting their results. (3b, 2007)</p>
<p>c. curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.</p>	<p>will understand not everything on the Internet is true. (3c, 2007)</p> <p>will gather multiple sources on one topic. (3c, 2007)</p> <p>will use spreadsheets, charts or graphs to analyze and present data. (3c, 2007)</p>
ISTE	Archdiocesan Educational Objectives
<p>d. build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.</p>	<p>will use technology to find multiple solutions to a problem.</p> <p>will use coding through websites such as www.code.org .</p> <p>will use technology to participate in class discussions such as common Google Docs or Today's Meet. (4d, 2007)</p>

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Innovative Designer	
Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:	
ISTE	Archdiocesan Educational Objectives
a. know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.	<p>will apply information on a particular topic to develop and design something new. (1a, 2007)</p> <p>will identify problems in their world or topics studied in social studies or science. (4a, 2007)</p> <p>will use online resources to locate information on a problem. (4a, 2007)</p> <p>will use presentation tools to explain a problem and potential solutions.</p> <p>will construct models or create code to solve a problem.</p> <p>will use online interactive models or simulations. (4d, 2007)</p>
b. select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.	will create project timelines. (4b, 2007)
c. develop, test and refine prototypes as part of a cyclical design process.	<p>will use presentation tools.</p> <p>will use online interactive models or simulations to investigate the consequences of alternative solutions. (4d, 2007)</p>
d. exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.	<p>will use technology to find multiple solutions to a problem.</p> <p>will code through websites such as www.code.org .</p> <p>will use technology to participate in class discussions. (4d, 2007)</p>

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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. Students:	
ISTE	Archdiocesan Educational Outcomes
a. formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.	will identify school, community, and world problems or topics studied in social studies or science. will use online resources to locate information on the problem. (4a, 2007)
b. 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.	will use tools such as timelines and graphs to predict future consequences of historical or present events.(1d, 2007) will compile the information they gather into a written, graphic, and/or oral presentation that includes identification of their sources. (3d, 2007) will use spreadsheets, charts, or graphs to analyze and present data and to recommend a solution. (4c, 2007)
c. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	will use presentation tools (Shadow Puppet Edu) to persuade others to implement a solution. will construct models or create code to solve a problem. will use online interactive models or simulations to investigate the consequences of alternative solutions. (Scratch Jr., Kodables) (4d, 2007)
d. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	will practice sequencing of events/steps of a process to determine the best solution. (4d, 2007)

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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. Students:	
ISTE	Archdiocesan Educational Objectives
a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.	<p>will begin to distinguish between sources that present factual information and those that present opinions or untrue information. (3c, 2007)</p> <p>will open a web browser and use a website. will change a picture or font style and color. will write using word processing tools. will organize data using spreadsheets. will use a program such as Paint to create a work of art. will record their voices into a presentation. (6b, 2007)</p>
b. create original works or responsibly repurpose or remix digital resources into new creations.	<p>will apply information on a particular topic to develop and design something new giving credit to others' ideas. (1a, 2007)</p> <p>will use various digital tools and applications such as: voice and sound recording tools; word processing, publishing, and presentation tools; video recording and editing tools; image editing tools; graphics and 3D design tools; and coding software to create original works. (1b, 2007)</p>
c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.	<p>will use interactive models or simulations to explore systems and issues that they study in science, math, and social studies. (1c, 2007)</p> <p>will use various digital media (including live or recorded video or audio; published documents, and multimedia presentations) to communicate information and ideas. (for example Sock Puppet, Story Jumper, Puppet Pals) (2b, 2007)</p>
d. Publish or present content that customizes the message and medium for their intended audience.	<p>will use digital tools, applications and video communication tools to work collaboratively to tailor the message of their presentation to the audience (for example, parents, teachers, other students). (2a, 2007)</p> <p>will use various digital media (including live or recorded video or audio; published documents, and multimedia presentations) to communicate information and ideas. (for example, Show Me and Voice Thread)(2b, 2007)</p>

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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:	
ISTE	Archdiocesan Educational Objectives
a. use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.	<p>will use digital tools and applications to work together to write, add graphics and share stories. (2a, 2007)</p> <p>will use digital communication tools (such as blogs or Skype) to connect with students from other cultures. (2c, 2007)</p>
b. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	will use digital tools and applications interact with other students or experts. (2a, 2007)
c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	<p>will use digital communication tools (such as blogs or Skype) to connect with students from other cultures. (for example: Kidblog, Word Press, Blogger, Today's Meet) (2d, 2007)</p> <p>will use applications such as brainstorming tools (for example Padlet, Popplet and NoteApp), graphic organizers, tables or timelines (for example ReadWriteThink's Timeline Student Interactive, Timetoast and Our Story, 3D Printing) to plan action steps that could solve problems. (4b, 2007)</p>
d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.	<p>will use digital tools and applications (such as Google Apps, Edmodo, online wikis or blogs) or video communication tools (like Skype or Facetime) to work collaboratively and interact with other students or experts. (2a, 2007)</p> <p>will use digital communication tools (such as blogs or Skype) to connect with students from other cultures. (for example: Kidblog, Word Press, Blogger, Today's Meet) (2c, 2007)</p> <p>will use presentation tools (Shadow Puppet Edu) to persuade others to implement a solution.</p> <p>will construct models or create code to solve a problem.</p> <p>will use online interactive models or simulations to investigate the consequences of alternative solutions. (Scratch, Kodables, Lego Robots, Squishy Circuits, MakeyMakey) (4d, 2007)</p>

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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. Students:	
ISTE	Archdiocesan Educational Objectives
a. articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.	<p>will articulate what they would like to learn via a survey or conversation with their teacher</p> <p>will set personal learning goals and leverage technology to meet those goals across all classes</p> <p>will reflect on their own learning with technology tools and determine if the tools they chose for a task were the best choices</p>
b. build networks and customize their learning environments in ways that support the learning process.	will use digital tools and applications (such as Google Apps, Edmodo, online wikis or blogs) or video communication tools (like Skype or Facetime) to work collaboratively and interact with other students or experts. (2a, 2007)
c. use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	will seek feedback from teachers and other students to improve their work as they select tools to demonstrate their learning (e.g. choosing video recording over audio recording; choosing a publishing tool over a word processing tool, etc. through Google Classroom, shared Google documents, electronic comments, etc.)
d. understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.	<p>will:</p> <ul style="list-style-type: none"> ● Handle computers and digital devices correctly and demonstrate the proper way to turn devices on and off. ● Use mouse, touch screen, keyboard and/or audio input devices. ● Select available printers and send files to print. ● Use proper terminology for computer and digital device parts and operations. ● Identify the functions of various parts of the computer. ● Log on to and navigate to various locations on a school network and the Internet. ● Open and save files in designated locations on the computer, network, online or external storage.

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	<p>Recognize that computers and digital devices are controlled by programming code. Create computer code using visual languages (like Blockly or Scratch). (6a, 2007)</p> <p>will:</p> <ul style="list-style-type: none">● Use correct keyboarding technique to touch type 15 wpm (by the end of 5th grade) (for example online keyboarding sites like BBC Dance Mat Typing and Keybr)● Use features of word processing and/or publishing software to type, edit, and format a document (for example manipulate font size and color of text, insert photos/clipart, use spell check, add bulleted and numbered text, cut, copy/paste text and graphics, use borders, shading and layout...)● Use features of spreadsheet software (formulas, charts, graphs, cell formatting, cell merging, cell locking, cut/copy/past with single cells or ranges of cells, custom names for columns, rows and column groups...) to enter and organize data, calculate values, and generate graphs (for example using Microsoft Excel, Open Office, Google Sheets, Numbers [Mac]).● Use features of presentation software or online tools to create presentations (for example Haiku Deck, Thinglink, PowToon, Animoto and Prezi)● Use digital cameras, graphics software, and image or video editing software to create and modify images or videos (for example Microsoft office picture manager, Gimp, iPhoto, Windows live movie maker, iMovie)● Use sound recording and editing software to capture and edit audio. (for example Audacity and Camtasia) <p>Use software and interactive websites to practice skills in other content areas (spelling, math, etc.) (for example the website <i>Interactive Sites for Education</i> http://interactivesites.weebly.com/ has a matrix</p>
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	<p>of many links across the curriculum)(6b, 2007)</p> <p>will solve common problems (like a frozen application). (6c, 2007)</p> <p>will compare and contrast any new devices or applications to those they have already used. (for example GCF LearnFree.org provides a nice overview of computer basics and applications.)(6d, 2007)</p>
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Digital Citizen	
Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. Students:	
ISTE	Archdiocesan Educational Objectives
a. cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.	<p>will use technology as a positive representation of themselves by creating a positive online presence and digital footprint utilizing digital portfolios.(5b,5c, 2007)</p> <p>understand the public and permanent nature of online communication and posting. (5a, 2007)</p>
b. engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.	<p>will identify the types of information that should and should not be shared online. (5a, 2007)</p> <p>will create safe usernames and passwords. (5a, 2007)</p> <p>will practice appropriate responses to inappropriate content or messages. (5a, 2007)</p> <p>will use digital tools to communicate rules and guidelines for safe and respectful online behavior (For example <i>Talking Safely Online</i> by Common Sense Education has downloadable student packets and lesson materials) (5d, 2007)</p> <p>will identify examples and possible consequences of cyberbullying and demonstrate appropriate responses. (For example <i>What's Cyberbullying?</i> by Common Sense Education has downloadable student packets and lesson materials) (5b, 2007)</p> <p>will recognize and commit to follow the provisions of the school's Acceptable Use Agreement. (5c, 2007)</p>
c. demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	will explain how copyright rules apply to online content; when and how students are allowed to use words and images they find online. (5a, 2007)
d. manage their personal data to	practice positive, legal and ethical online behaviors.(5a, 2007)

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<p>maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.</p>	<p>protect their own privacy in the course of conducting research as well as adhering to copyright protections and respecting intellectual property. (2d, 2016)</p>
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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. Students:

ISTE	Archdiocesan Educational Objectives
<p>a. plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.</p>	<p>will determine what information they need to answer a research question, identify the sources where they might find that information, and select appropriate keywords or search terms to locate the information. (<i>Key to Keywords</i> by Common Sense Education provides downloadable lesson materials and student packets) (3a, 2007)</p> <p>will locate information from digital sources (including linked websites, online library databases, web search engines, and surveys). They will select and record relevant information from their sources by tagging or taking notes. Students will record their sources to cite when presenting their results. (<i>Whose Is It, Anyway?</i> and <i>How to Cite a Site</i> by Common Sense Education provides downloadable lesson materials and student packets) (Examples of kid safe search engines - Kids Click and Sweet Search) (Video, <i>App Smashing</i>, by Jon Corippo informs educators how to combine and blend apps for innovative student projects (Nov. 24, 2014) (3b, 2007)</p>
<p>b. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.</p>	<p>will distinguish between sources that present factual information and those that present opinions or even deliberate hoaxes (see Kathy Schrock's Guide to Everything/Critical Evaluation - <i>Sites to Use for Demonstrating Critical Evaluation</i>). (for example <i>Rating Websites, Choosing a Search Site, Advertising Detectives and Right Sites</i> by Common Sense Education provides downloadable lesson materials. Also Kathy Schrock's handout <i>The 5W's of Web Site Evaluation</i> and student handout-<i>Critical Evaluation of a Website Elementary School Level</i>) (3c, 2007)</p> <p>will record their sources to cite when presenting their results. (3b, 2007)</p>
<p>c. curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful</p>	<p>will distinguish between sources that present factual information and those that present opinions or even deliberate hoaxes. (3c, 2007)</p> <p>will synthesize information to create new</p>

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connections or conclusions.	meaning for themselves and others. (3c, 2007) will use online interviews, surveys or other digital tools to gather data. Then they will use spreadsheets, charts or graphs to analyze and present data and recommend solutions. (3c, 2007)
ISTE	Archdiocesan Educational Objectives
d. build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.	will compile the information they gather into a written, graphic (for example Pic Collage, Label Box, Phonto, and Skitch), and/or oral presentation that includes identification of their sources. (4d, 2007)

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Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:

ISTE	Archdiocesan Educational Objectives
<p>a. know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.</p>	<p>will apply information on a particular topic to develop and design something new (for example, apply information on planets in the solar system to create a description of a newly discovered planet). (1a, 2007)</p> <p>will identify school, community and world problems related to technology (e.g. disposal of e-waste) or topics studied in social studies or science. (4a, 2007)</p> <p>will use online resources to locate information on the problem. (4a, 2007)</p> <p>will use presentation tools (Shadow Puppet Edu) to persuade others to implement the solution. For engineering design, programming or robotics, they may construct models or create code to solve a problem. Students may also use online interactive models or simulations to investigate the consequences of alternative solutions. (Scratch, Kodables, Lego Robots, Squishy Circuits, MakeyMakey) (4d, 2007)</p>
<p>b. select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.</p>	<p>will use applications such as brainstorming tools (for example Padlet, Popplet and NoteApp), graphic organizers, tables or timelines (for example ReadWriteThink's Timeline Student Interactive, Timetoast and Our Story, 3D Printing) to plan action steps that could solve the problem. (4b, 2007)</p>
<p>c. develop, test and refine prototypes as part of a cyclical design process.</p>	<p>will construct models or create code to solve a problem in engineering design, programming or robotics. Students may also use online interactive models or simulations to investigate the consequences of alternative solutions. (Scratch, Kodables, Lego Robots, Squishy Circuits, MakeyMakey) (4d, 2007)</p>
<p>d. exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.</p>	<p>will understand that real world problems may have multiple solutions, each that can be addressed in multiple ways. (4d, 2007)</p>

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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. Students:

ISTE	Archdiocesan Educational Outcomes
<p>a. formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.</p>	<p>will identify school, community, and world problems related to technology (e.g. disposal of e-waste) or topics studied in social studies or science. They will use online resources to locate information on the problem. (Sweet Search, a search engine for students has many links for e-waste problems regarding schools and local and global communities.) (4a, 2007)</p>
<p>b. 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.</p>	<p>will use tools such as timelines and graphs to predict future consequences of historical or present events (such as changes in climate or changes caused by new technology). (for example: Dipity, myHistro, Read Write Think Interactive Timeline, TimeToast.) (1d, 2007)</p> <p>will compile the information they gather into a written, graphic (for example Pic Collage, Label Box, Phonto, and Skitch), and/or oral presentation that includes identification of their sources. (3d, 2007)</p> <p>will use online interviews, surveys (for example Flisti, Mentimeter, Google Forms and Docs and Survey Monkey) or other digital tools to gather data. Then they will use spreadsheets, charts, or graphs to analyze and present data and to recommend a solution. (4c, 2007)</p>
<p>c. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.</p>	<p>will use presentation tools (Shadow Puppet Edu) to persuade others to implement the solution. For engineering design, programming or robotics, they may construct models or create code to solve a problem. Students may also use online interactive models or simulations to investigate the consequences of alternative solutions. (Scratch, Kodables, Lego Robots, Squishy Circuits, MakeyMakey) (4d, 2007)</p>
<p>d. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.</p>	<p>will practice sequencing of events/steps of a process to determine the best “automated solution.” (4d, 2007)</p> <p>will write code that produces algorithms as step-by-step directions (e.g. Code.org; Scratch Jr.)</p>

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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. Students:	
ISTE	Archdiocesan Educational Objectives
a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.	will distinguish between sources that present factual information and those that present opinions or even deliberate hoaxes (see Kathy Schrock’s Guide to Everything/ <i>Critical Evaluation - Sites to Use for Demonstrating Critical Evaluation</i>). (for example <i>Rating Websites, Choosing a Search Site, Advertising Detectives and Right Sites</i> by Common Sense Education provides downloadable lesson materials. Also Kathy Schrock’s handout <i>The 5W’s of Web Site Evaluation</i> and student handout- <i>Critical Evaluation of a Website Elementary School Level</i>) (3c, 2007)
b. create original works or responsibly repurpose or remix digital resources into new creations.	<p>will apply information on a particular topic to develop and design something new (for example, apply information on planets in the solar system to create a description of a newly discovered planet). (1a, 2007)</p> <p>will use various digital tools and applications such as: voice and sound recording tools; word processing, publishing, and presentation tools; video recording and editing tools; image editing tools; graphics and 3D design tools; and coding software to create original works such as: podcasts, interactive presentations, posters, brochures, videos, animations, games, or fabricated objects. (for example: <i>Little Bird</i> Easy to use for reports, journals, creative writing, podcasts, commercials, history timelines, science experiments, drawing, ebooks, independent learning, collaborative learning) (1b, 2007)</p>
c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.	will use interactive models or simulations to explore systems and issues that they study in science, math, and social studies (such as the functions of body organs, the operation of electrical circuits, or the experiences of runaway slaves in the Underground Railroad). Example: <u>Mission US: Flight to Freedom</u> (1c, 2007)

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	<p>will use various digital media (including live or recorded video or audio; published documents, and multimedia presentations) to communicate information and ideas. (for example Haiku Deck, Sock Puppet, Story Jumper, Puppet Pals) (2b, 2007)</p>
<p>d. Publish or present content that customizes the message and medium for their intended audience.</p>	<p>will use digital tools and applications (such as Google Apps, Edmodo, online wikis or blogs) or video communication tools (like Skype or Facetime) to work collaboratively and interact with other students or experts. (2a, 2007)</p> <p>will use various digital media (including live or recorded video or audio; published documents, and multimedia presentations) to communicate information and ideas. (for example Haiku Deck, Sock Puppet, Story Jumper, Puppet Pals) (2b, 2007)</p>

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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:	
ISTE	Archdiocesan Educational Objectives
a. use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.	<p>will use digital tools and applications (such as Google Apps, Edmodo, online wikis or blogs) or video communication tools (like Skype or Facetime) to work collaboratively and interact with other students or experts. (2a, 2007)</p> <p>will use digital communication tools (such as blogs or Skype) to connect with students from other cultures. (for example: Kidblog, Word Press, Blogger, Today's Meet) (2c, 2007)</p>
b. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	<p>will use digital tools and applications (such as Google Apps, Edmodo, online wikis or blogs) or video communication tools (like Skype or Facetime) to work collaboratively and interact with other students or experts. (2a, 2007)</p>
c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	<p>will use digital communication tools (such as blogs or Skype) to connect with students from other cultures. (for example: Kidblog, Word Press, Blogger, Today's Meet) (2d, 2007)</p> <p>will use applications such as brainstorming tools (for example Padlet, Popplet and NoteApp), graphic organizers, tables or timelines (for example ReadWriteThink's Timeline Student Interactive, Timetoast and Our Story, 3D Printing) to plan action steps that could solve the problem. (4b, 2007)</p>
d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.	<p>will use digital tools and applications (such as Google Apps, Edmodo, online wikis or blogs) or video communication tools (like Skype or Facetime) to work collaboratively and interact with other students or experts. (2a, 2007)</p> <p>will use digital communication tools (such as blogs or Skype) to connect with students from other cultures. (for example: Kidblog, Word Press, Blogger, Today's Meet) (2c, 2007)</p> <p>will use presentation tools (Shadow Puppet Edu) to persuade others to implement the solution. For engineering design, programming or robotics, they may construct models or</p>

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	create code to solve a problem. Students may also use online interactive models or simulations to investigate the consequences of alternative solutions. (Scratch, Kodables, Lego Robots, Squishy Circuits, MakeyMakey) (4d, 2007)
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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. Students:	
ISTE	Archdiocesan Educational Objectives
e. articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.	<p>will use technology as a positive representation of themselves by creating a positive online presence and digital footprint utilizing digital portfolios.(5b,5c, 2007)</p> <p>will set personal learning goals and leverage technology to meet those goals across the curriculum</p> <p>will identify areas of personal interest that will guide their own learning. With the help of an educator, students will learn how to set learning goals, how to develop strategies to achieve those goals, and how to reflect on the learning process to improve outcomes. (1a, 2016)</p>
f. build networks and customize their learning environments in ways that support the learning process.	will identify and build online networks of experts within school policy and customize their environments in ways that their learning , with the supervision and support of an educator, can grow to personal learning networks. (1b, 2016)
g. use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	<p>will solicit feedback from an educator using technology to inform the student of the success of their practice and how to improve their practice through demonstrating their learning in a variety of ways.</p> <p>will collaborate with peers and seek feedback from peers to improve both their learning and their use of technology</p>
h. understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.	<p>will identify and use basic components of digital input and output devices including but not limited to personal computers, tablets, still/digital/video cameras. (6a, 2007)</p> <p>will choose appropriate software and online applications for the designed task and be able to locate, launch, and exit applications including web sites using different browsers. (6b, 2007)</p>

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	<p>will apply strategies for identifying and solving routine frozen screens, identify warning signs of a compromised device, and perform undo/redo and boot and reboot functions. (6c, 2007)</p> <p>will operate and navigate new and different operating systems, platforms, and media devices based on prior knowledge. (6d, 2007)</p>
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Digital Citizen

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

Students:

ISTE	Archdiocesan Educational Objectives
e. cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.	<p>will use technology as a positive representation of themselves by creating a positive online presence and digital footprint utilizing digital portfolios.(5b,5c, 2007)</p> <p>understand the public and permanent nature of online communication and posting. (5a, 2007)</p>
f. engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.	<p>will identify the types of information that should and should not be shared online. (5a, 2007)</p> <p>create safe usernames and passwords. (5a, 2007)</p> <p>practice appropriate responses to inappropriate content or messages. (5a, 2007)</p> <p>will recognize and commit to follow the provisions of the school's Acceptable Use Agreement inside and outside school. (5c, 2007)</p> <p>will identify examples and possible consequences of cyberbullying and demonstrate appropriate responses. (5b, 2007)</p>
g. demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	<p>explain how copyright rules apply to online content; when and how students are allowed to use words and images they find online. (5a, 2007)</p>
h. manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	<p>practice positive, legal and ethical online behaviors.(5a, 2007)</p> <p>protect their own privacy in the course of conducting research as well as adhering to copyright protections and respecting intellectual property. (2d, 2016)</p>

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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. Students:	
ISTE	Archdiocesan Educational Objectives
e. plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.	<p>will determine what information they need to answer a research question, identify sources when they might find that information and select appropriate keywords or search terms to locate the information. (3a, 2007)</p> <p>will locate information from digital sources including linked web sites, online library databases, web search engines and surveys.(3b, 2007)</p> <p>will select and record relevant information from their sources by tagging or taking notes. (3b, 2007)</p> <p>will record their sources to cite when presenting their results. (3b, 2007)</p> <p>will use online problem solving programs and simulations to demonstrate mastery of concepts and thinking skills (Lure of the Labyrinth, Villainy, Inc., and Mission US)</p>
f. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.	<p>will select and record relevant information from their sources by tagging or taking notes. (3b, 2007)</p> <p>will record their sources to cite when presenting their results. (3b, 2007)</p> <p>will distinguish between sources that present factual information and those that present opinions or even deliberate hoaxes. (3c, 2007)</p>
g. curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.	<p>will distinguish between sources that present factual information and those that present opinions or even deliberate hoaxes. (3c, 2007)</p> <p>will synthesize information to create new meaning for themselves and others. (3c, 2007)</p> <p>will use online interviews, surveys or other</p>

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	digital tools to gather data. They will then use spreadsheets, charts or graphs to analyze and present data and recommend solutions. (3c, 2007)
ISTE	Archdiocesan Educational Objectives
h. build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.	<p>will use presentation tools to persuade others to implement a solution based on an engineering design, programming or robotics. (4d, 2007)</p> <p>will construct models or create code to solve a problem. (3D-modelling, Tynker coding, Hour of Code)(4d, 2007)</p> <p>use online interactive models or simulations to investigate the consequences of alternative solutions. (Lure of the Labyrinth, Villainy, Inc., Mission US) (4d, 2007)</p>

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Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:

ISTE	Archdiocesan Educational Objectives
e. know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.	will identify school, community and world problems related to technology (e.g. disposal of e-waste) or topics studied in social studies or science. (4a, 2007) will use online resources to locate information on the problem. (4a, 2007)
f. select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.	will choose appropriate technologies to brainstorm ideas to create and/or design something new e. g. create a new business that provides a product or service using word processing, infographics, mind mapping, or a graphic organizer. (1a, 4b,2007)
g. develop, test and refine prototypes as part of a cyclical design process.	will with the supervision and advice of an educator, practice a process to develop, test and refine prototypes for engineering designs, programming and robotics that models the recursive nature of problem solving. (4d, 2007)
h. exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.	will understand that real world problems may have multiple solutions, each that can be addressed in multiple ways. (4d, 2007)

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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. Students:

ISTE	Archdiocesan Educational Outcomes
e. formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.	will identify school, community, and world problems related to technology or topics studied in social studies or science.
f. 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.	<p>will use timelines and graphs to forecast and predict possible outcomes (e.g. forecast possible sales using spreadsheet, graph, infographic or survey). (1d, 2007)</p> <p>will compile information they gather into a written, graphic, and/or oral presentation that includes identification of their sources. (3d, 2007)</p> <p>will use online interviews, surveys or other digital tools to gather data. (4c, 2007)</p> <p>will use spreadsheets, charts, or graphs to analyze and present data to recommend a solution. (4c, 2007)</p>
g. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	<p>will use presentation tools to persuade others to implement the solution determined by using engineering design, programming, robotics, constructing a model, or creating code to solve a problem. (4d, 2007)</p> <p>will use online interactive models or simulations to investigate the consequences of alternative solutions. (4d, 2007)</p>
h. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	will practice sequencing of events/steps of a process to determine the best “automated solution.” (4d, 2007)

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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. Students:	
ISTE	Archdiocesan Educational Objectives
e. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.	<p>will distinguish between sources that present factual information and those that present opinions or even deliberate hoaxes. (3c, 2007)</p> <p>will choose appropriate technologies to address desired objectives in the creation and communication of ideas and products</p>
f. create original works or responsibly repurpose or remix digital resources into new creations.	<p>will choose appropriate technologies to brainstorm ideas to create and/or design something new. (1a, 2007)</p> <p>will use various digital tools to create a recording or actual product (e.g. create and infomercial, public service announcement, video, voice or sound recording, 3-D object, or code). (1b, 2007)</p>
g. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.	<p>will design models and use simulations to explore systems (e.g. create a business model incorporating marketing , finance, sales, production; publication design software to design business cards, letterhead and brochures). (1c, 2007)</p> <p>will use learning networks and various digital media tools (e.g. live or recorded music, audio, published documents, multimedia presentations, blogs, personal web sites and online portfolios) to communicate information and ideas. (2b, 2007)</p>

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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:

ISTE	Archdiocesan Educational Objectives
e. use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.	<p>will use digital tools, applications and other virtual field trip resources to work collaboratively and interact with other students around the world to encourage extending the learning in a curricular area as well as becoming familiar with cultural norms other than their own. (2a, 2007)</p> <p>will use digital communication tools for both synchronous and asynchronous communication with students from other cultures. (2c, 2007)</p>
f. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	<p>will use tools, applications and other virtual field trip resources to work collaboratively and interact with experts around the world to encourage extending the learning in a curricular area as well as become familiar with cultural norms other than their own. (2a, 2007)</p>
g. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	<p>will work with other members of a group using digital tools, applications and cloud computing to create a joint product or develop a solution to a problem. (2d, 2007)</p> <p>will use applications such as brainstorming tools, graphic organizers, tables or timelines to plan action steps that could solve a problem. (4b, 2007)</p>
h. explore local and global issues and use collaborative technologies to work with others to investigate solutions.	<p>will use digital communication tools to connect with students from other cultures in order to solve predetermined problems and investigate solutions. (2c, 2007)</p>