Archdiocese of Louisville Catholic Schools Educational Technology Standards 2025

The Archdiocese of Louisville is committed to fostering students who are inquisitive, creative, and resourceful thinkers. We strive to support our schools in developing informed citizens, effective problem-solvers, groundbreaking pioneers, and visionary leaders. This educational technology curriculum is designed to cultivate these essential qualities, preparing students for active and ethical participation in our global society.

The COVID-19 pandemic dramatically accelerated the integration of technology in education. While teachers faced the immense challenge of simultaneously instructing students in person and online, this period also enhanced their technological proficiency and ensured that all students have access to learning devices. This widespread access makes it imperative that we empower students to be safe and responsible online. By equipping them with knowledge and skills, we help them protect themselves and others in a digitally connected world.

A core component of this curriculum is developing students into discerning and ethical users of emerging technologies like artificial intelligence. As Pope Francis wrote in his encyclical *Laudato Si*, “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.” From their earliest years in our schools, students will learn to navigate the ethical landscape of technology, understanding when its use is appropriate and when it is not.

While technology is a powerful tool, our teachers remain the essential facilitators of learning. They guide students to use technology as a resource for deeper engagement with the curriculum, encouraging them to provide full explanations and develop 21st-century skills. This approach fosters students who take responsibility for their own learning, becoming the creative and knowledgeable participants we aim to develop.

This curriculum is built upon national standards in technology, computer science, and data literacy. It also incorporates annual instruction on digital citizenship and the appropriate use of artificial intelligence, providing a comprehensive framework that can be taught as a standalone class or integrated across subjects. The standards are organized in grade bands (K-2, 3-5, 6-8), with the expectation that the competencies for each band will be achieved by the end of the final grade listed. This structure allows schools the flexibility to implement the curriculum in a way that best suits their students' needs.

Through the thoughtful implementation of this curriculum, our schools will guide students to become not only proficient with modern tools but also discerning and ethical in their use. We are confident that by fostering these abilities, we are honoring a commitment to the excellence that flows from lifelong learning. Ultimately, we are preparing students with the skills and moral standards necessary to become the creative, knowledgeable, and visionary participants our future world requires.

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1.1 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.1.a Students set learning goals, develop strategies leveraging technology to achieve them, and reflect on the learning process to improve learning outcomes.	K-2.1.1.a1 Set personal learning goals and use digital tools to achieve those goals, with guidance and support (ex: increase reading fluency by recording and reflecting upon student reading). K-2.1.1.a2 Reflect on the learning process to improve learning over time, with guidance and support (ex: using a digital writing portfolio and reflection log/journal).	3-5.1.1.a1 Set personal learning goals and self-select digital tools to support accomplishing the goals. 3-5.1.1.a2 Reflect on and revise the learning process as needed to improve learning over time (ex: Using a digital writing portfolio and reflection log/journal).	6-8.1.1.a1 Set personal learning goals and select and manage digital tools that will best support individualized learning (ex: use collaborative documents to revise and reflect on the writing process). 6-8.1.1.a2 Reflect on successes, areas of improvement, and make necessary revisions to improve the learning over time (ex: using a digital writing portfolio and reflection log/journal).
1.1.b Students build networks and customize their learning environments in ways that support the learning process.	K-2.1.1.b1 Participate in teacher-led explorations utilizing digital tools to expand learning spaces beyond the classroom (ex: expert video channels, video conferencing with professionals, author blogs).	3-5.1.1.b1 Participate in explorations that support identifying and building a network (ex: expert video channels, video conferencing with professionals, author blogs unique to one's own interests/needs) to support the learning process.	6-8.1.1.b1 Collaborate with a network of self-selected global partners (ex: students, teachers, professionals, and the global community) to customize and support the individual learning process.

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Concepts	**K-2**	**3-5**	**6-8**
1.1.c Students use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.	K-2.1.1.c1 Recognize and use technology to seek feedback as a valued component of the learning process. K-2.1.1.c2 Use feedback to improve the demonstration of learning (ex: student uses interactive software with immediate feedback to guide their performance).	3-5.1.1.c1 Seek feedback that informs and improves learning (ex: student seeks feedback from teachers and peers during the digital writing process). 3-5.1.1.c2 Use feedback to improve products that demonstrate learning in a variety of ways.	6-8.1.1.c1 Seek feedback from an authentic audience and from features embedded in digital tools (ex: share documents with teachers and peers asking for feedback on writing). 6-8.1.1.c2 Use feedback to analyze data and make learning adjustments based on feedback.
1.1.d Students understand fundamental concepts of how technology works, demonstrate the ability to choose and use current technologies effectively, and are adept at thoughtfully exploring emerging technologies.	K-2.1.1.d1 Explore a variety of digital tools and discover how they work based on fundamental concepts of technology operations (ex: student learns how to turn the audio up/down, how to open, save, and close files). K-2.1.1.d2 Transfer conceptual knowledge of technology operations in multiple contexts, with guidance and support (ex: student has learned to use a Chromebook, and they use what they know about Chromebooks on a different device).	3-5.1.1.d1 Explore and select digital tools that support learning in different contexts (ex: a student chooses a tool to collect data and then creates a graphical display of the data using a digital tool of their choice). 3-5.1.1.d2 Transfer conceptual knowledge of technology operations to multiple contexts. 3-5.1.1.d3 Transfer knowledge of fundamental concepts of technology operations to troubleshoot basic technology operations.	6-8.1.1.d1 Understand the fundamental use of technology tools to consider how to use technology to promote creativity, communication, collaboration, and critical thinking. 6-8.1.1.d2 Choose and troubleshoot technology to suit the purpose. 6-8.1.1.d3 Transfer the knowledge of existing technology to explore new technologies.

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1.1 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.1.e Students will look at how technology is used, has evolved, and can impact society.	K-2.1.1.e1 Identify computing technologies used in modern daily life.	3-5.1.1.e1 Describe how computing technologies evolve in response to societal needs and changes.	6-8.1.1.e1 Evaluate how challenges in different communities around the world have led to computing innovations.
1.1.f Students will look at new and emerging technologies.	K-2.1.1.f1 Describe how new technologies can improve life or solve problems.	3-5.1.1.f1 Evaluate how people make choices about the use of emerging technologies based on their needs and the consequences.	6-8 1.1.f1 Contrast the features, functionality and characteristics of emerging technologies.
1.1.g Students will look at how digital tools help careers and investigate technology careers.	K-2.1.1.g1 Discuss ways computing is used in a variety of industries and careers.	3-5.1.1.g1 Examine how professionals across industries adopt new computing technologies and develop new expertise throughout their careers.	6-8 1.1.g1 Analyze how professionals in different careers use technology to solve real-world problems.

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1.2 Digital Citizen			
Students recognize the responsibilities and opportunities for contributing to their digital communities.			
Concepts	**K-2**	**3-5**	**6-8**
1.2.a Students manage their digital identity and understand the lasting impact of their online behaviors on themselves and others and make safe, legal, and ethical decisions in the digital world.	K-2.1.2.a1 Understand what it means to be a positive influence offline and how that could relate to being positive online. K-2.1.2.a2 Show awareness that when something is put on the internet (websites, social media, apps) it can leave a trail online (digital footprint).	3-5.1.2.a1 Model positive behaviors in online communications at school and understand how to apply those behaviors to online activities outside of school. 3-5.1.2.a2 Show awareness and understand they are creating a digital footprint, and can identify positive and negative online activity.	6-8.1.2.a1 Recognize behaviors, habits, and actions that create, maintain, and influence both positive and negative digital identities, reputations, and footprints in the digital world. 6-8.1.2.a2 Build awareness of public and permanent nature of online actions and the possible present and future consequences in personal, academic, and professional lives.
1.2.b Students demonstrate empathetic, inclusive interactions online and use technology to responsibly contribute to their communities.	K-2.1.2.b1 Choose appropriate websites, and understand to seek help from a trusted adult when faced with problems online (related to safety). K-2.1.2.b2 Understand that what is online has positive and negative consequences, and relate the understanding to behaviors offline.	3-5.1.2.b1 Collaborate online with peers and educators in a positive manner, and begin to recognize online behaviors can have positive or negative consequences. 3-5.1.2.b2 Understand that decisions and behaviors online can affect others in both negative and positive and hurtful and helpful ways.	6-8.1.2.b1 Recognize and demonstrate responsible behaviors that are safe, ethical, and legal across a variety of devices, platforms, and settings while considering possible consequences for themselves and/or others. 6-8.1.2.b2 Understand how to be respectful to others online while interacting, communicating, and collaborating and know strategies in order to avoid and/or combat cyberbullying.

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1.2 Digital Citizen Students recognize the responsibilities and opportunities for contributing to their digital communities.			
Concepts	**K-2**	**3-5**	**6-8**
1.2.c Students safeguard their well-being by being intentional about what they do online and how much time they spend online.	K-2.1.2.c1 Describe potential challenges associated with extended technology use. K-2.1.2.c2 Define and respect technology limits (balance).	3-5.1.2.c1 Analyze the quality of various digital activities and explain why quality should be factored into screen time limits. 3-5.1.2.c2 Apply self-management techniques to technology use.	6-8.1.2.c1 Use tools, settings, and strategies to develop screen time goals and manage device use. 6-8.1.2.c2 Describe how some uses of technology can support higher levels of physical, social, and emotional well-being.
1.2.d Students take action to protect their digital privacy on devices and manage their personal data and security while online.	K-2.1.2.d1 Understand usernames and passwords, and understand why these are not shared with others. K-2.1.2.d2 Navigate to trusted websites and know how to search for websites in a safe manner with awareness that not all websites are safe.	3-5.1.2.d1 Create and know usernames and passwords, and understand why these and other personal information are not shared with others online and offline. 3-5.1.2.d2 Search websites, understanding that some sites are not safe without adult permission.	6-8.1.2.d1 Distinguish between information that is public and personal/private and develop and utilize strategies to secure and protect personal/private data and user accounts. 6-8.1.2.d2 Understand that data-collection technology is used to track online navigation and recognize and avoid online scams and phishing.
1.2.e Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	K-2.1.2.e1 Identify acceptable use of the internet and other digital resources.	3-5.1.2.e1 Demonstrate acceptable use of the internet and identify acceptable use of social media and other digital media.	6-8.1.2.e1 Demonstrate acceptable use of the internet, information, media, and digital resources including social media according to user agreements, policies, and law.

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1.2 Digital Citizen Students recognize the responsibilities and opportunities for contributing to their digital communities.			
Concepts	**K-2**	**3-5**	**6-8**
1.2e (continued)	K-2.1.2.e2 Recognize that everyone has different ideas in creating their own work (intellectual property) and that we must respect others' work, not copy it, and give credit to creators.	3-5.1.2.e2 Recognize that everyone has different ideas in creating their own work (intellectual property) and that we must respect others' work, not copy it, and give credit to creators.	6-8.1.2.e2 Recognize and respect different intellectual property classifications including those that are copyrighted, subject to fair use, public domain properties, and/or have Creative Commons licenses. 6-8.1.2.e3 Recognize and seek permission to use the intellectual property of others with proper citations and attribution elements.
1.2.f Students demonstrate an understanding of hardware, software, and networks	K-2.1.2.f1 Learn about basic hardware components, software functions, and network capabilities.	3-5.1.2.f1 Articulate how hardware, software, and networks work together and troubleshoot problems.	6-8.1.2.f1 Apply basic troubleshooting processes to identify and fix common hardware, software, and network issues.

1.3 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.3.a Students use effective research strategies to find resources that support their learning needs, personal interests, and creative pursuits.	K-2.1.3.a1 Use basic keyword searches to locate information to build a deeper understanding of a subject. K-2.1.3.a2 Apply print reference knowledge and strategies to find and locate information in digital resources. K-2.1.3.a3 Satisfy curiosity by exploring answers to questions with digital resources.	3-5.1.3.a1 Filter searches to gather specific information on a subject or research topic (ex: searching “food sources for Beluga whales” instead of searching “whales”). 3-5.1.3.a2 Use a variety of digital reference resources (ex: digital encyclopedia, digital atlas, etc) to locate information related to a research topic.	6-8.1.3.a1 Demonstrate effective digital search techniques (ex: filtering searches using advanced settings/tools, keyword/term choices, or phrases) to locate information or other resources to gather specific information on a subject or research topic. 6-8.1.3.a2 Practice research strategies that outline a process for locating information digitally (ex: tools and effective search techniques).
1.3.b Students evaluate the accuracy, validity, bias, origin, and relevance of digital content.	K-2.1.3.b1 Classify websites into general categories to guide relevance of search results (ex: entertainment, gaming, reference, learning). K-2.1.3.b2 Compare information on the same topics across multiple digital resources.	3-5.1.3.b1 Identify criteria to analyze information presented in a digital resource to determine its accuracy, perspective, credibility, and relevance. 3-5.1.3.b2 Explore different media types (ex: infographics, videos, graphs, text) and how they might influence an audience.	6-8.1.3.b1 Select a method, tool, or strategy to evaluate sources for credibility, relevance, authority, accuracy, and perspective. 6-8.1.3.b2 Analyze digital information, media, data, and materials for credibility, relevance, authority, accuracy, and perspective.

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1.3 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.3b (continued)		3-5.1.3.b3 Compare information presented across different domain extensions (ex: com, .org, .edu, .gov) to help evaluate accuracy, perspective, credibility, and relevance of information.	
1.3.c Students curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.	K-2.1.3.c1 Use digital organizers to create collections of artifacts (ex: bookmarks, links, sites). K-2.1.3.c2 Organize gathered artifacts into general themed collections (ex: famous Americans, bridges, states).	3-5.1.3.c1 Collect information (ex: images, diagrams, maps, graphs, infographics, videos, animations) using digital tools from resources to clarify and add to knowledge of a topic. 3-5.1.3.c2 Organize gathered artifacts into themed collections with subcategories. (ex: famous American scientists).	6-8.1.3.c1 Combine various tools (ex: spreadsheet, database, saved files, and methods (ex:concept mapping, flow charting, and outlining software)) to classify information, observations, or experiments digitally. 6-8.1.3.c2 Compile information from digital resources (ex: search engines, online periodical databases, virtual library/online catalogs, interactive video conferencing).
1.3.d Students build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.	K-2.1.3.d1 Use a variety of digital resources to explore and report on real world issues.	3-5.1.3.d1 Use a variety of digital resources to explore and collaborate with others on real world issues.	6-8.1.3.d1 Build knowledge by generating and testing solutions for exploring real world issues using a variety of technology (ex: data collection tells, models, videos, podcast, simulations, forms).

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1.3 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.3.e Students produce creative artifacts and make meaningful learning experiences from curated knowledge for themselves and others.	K-2.1.3.e1 Use digital tools to create artifacts from information found in various digital resources.	3-5.1.3.e1 Use digital tools to create artifacts from information found in various digital resources.	6-8.1.3.e1 Demonstrate the ability to create new ideas/concepts or products with digital tools.
1.3.f Students build foundational knowledge about Artificial Intelligence (AI)	K-2.1.3.f1 Look at simple AI applications and discuss how AI works.	3-5.1.3.f1 Discuss how AI works, explore its applications in different fields, and engage with simple AI tools.	6-8.1.3.f1 Analyze how AI works, explore its applications in different fields, and engage with more complex AI tools.
1.3.g Students use critical thinking skills to apply Artificial Intelligence (AI) safely and ethically.	K-2.1.3.g1 Evaluate AI products for safety and accuracy.	3-5.1.3.g1 Learn to question information presented by AI systems, analyze its accuracy, and understand potential biases.	6-8.1.3.g1 Evaluate information presented by AI systems and use critical thinking to apply AI safely and ethically.

1.4 Innovative Designer			
Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.			
Concepts	**K-2**	**3-5**	**6-8**
1.4.a. Students know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts, or solving authentic problems.	K-2.1.4.a1 Use technology to identify a problem in the school or home environment with guidance and support. K-2.1.4.a2 Describe the problem, using technology, and explain why it is problematic.	3-5.1.4.a1 Identify and describe problems or challenges present in their community then analyze the conditions that make it a problem.	6-8.1.4.a1 Collaborate with others in and out of the classroom using digital tools to identify real-world problems and propose a solution that affects the local and global community.
1.4.b Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.	K-2.1.4.b1 Demonstrate perseverance when working to complete a challenging task.	3-5.1.4.b1 Demonstrate perseverance when working with authentic open-ended-problems.	6-8.1.4.b1 Demonstrate the ability to investigate and make sense of open-ended problems using digital tools and persevere in solving them.
1.4.c Students develop, test, and refine prototypes as part of a cyclical design process.	K-2.1.4.c1 Use a design process (ex: creative thinking spiral) to ask questions, suggest solutions, test ideas to solve problems, and share their learning, with guidance and support.	3-5.1.4.c1 Explore and practice how a deliberate design process (ex: design thinking works) to generate ideas, consider solutions, test theories, plan to solve a problem, or create innovative products to share with others.	6-8.1.4.c1 Explore and choose appropriate processes and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
1.4.d Exhibit a tolerance for ambiguity, perseverance, and the capacity to work with open-ended problems.	K-2.1.4.d1 Use a variety of age-appropriate digital tools to design something, with guidance and support.	3-5.1.4.d1 Use a variety of digital tools to plan and manage a design process, with consideration to design constraints and risks.	6-8.1.4.d1 Investigate and use meaningful digital tools to plan and manage a design process that considers constraints and calculated risks.

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1.4 Innovative Designer Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.			
Concepts	**K-2**	**3-5**	**6-8**
1.4d (continued)			6-8.1.4.d2 Create, develop and test prototypes; understand and appreciate that failures are an opportunity for growth.
1.4.e Students will read, interpret, and create code, translate algorithms into code, and understand programming languages' types, syntax, and semantics.	K-2.1.4.e1 Use a design to develop ideas or creations, test their design, and redesign if necessary.	3-5.1.4.e1 Develop code from student-created algorithms that include sequence, events, iteration, selection, and variables to express ideas, complete a task, or solve a problem.	6-8.1.4.e1 Analyze how a segment of code works by identifying and describing key components (ex: variables, conditionals, loops, functions). 6-8.1.4.e2 Develop code from algorithms that include variables, data, and storage.
1.4.f Students will organize and structure code while testing and refining their programs.	K-2.1.4.f1 Debug errors in programs that include sequence, events, and iteration. K-2.1.4.f2 Use an application or website (ex: Scratch Jr, Code.org) to write and test a program.	3-5.1.4.f1 Debug programs using systematic strategies (ex: testing while writing, tracing code) to ensure they run as intended. 3-5 1.4.f2 Create a unique program by modifying other programs or incorporating portions of other programs into one's own work to develop something new or add more advanced features.	6-8.1.4.f1 Create or modify existing programs to incorporate sequence, selection, and iteration. 6-8.1.4.f2 Use standard practices to test, debug, document, and peer-review code.

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1.4 Innovative Designer			
Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions.			
Concepts	**K-2**	**3-5**	**6-8**
1.4.g Students will collaborate with others to create projects focusing on defined project roles, shared documentation, and acknowledgement of project contributions.	K-2.1.4.g1 Document the steps taken and choices made during program development, recognizing the contributions of others in the process. K-2.1.4.g2 Use structured constructive feedback from a peer to improve a programming project.	3-5.1.4.g1 Create embedded or external documentation of a programming project, including explanations of code functionality, choices made, and attribution for the contributions of others. 3-5.1.4.g2 Collaborate with peers to design, implement, document, and review a programming project that expresses an idea or solves a problem.	6-8.1.4.g1 Document a program, using comments, descriptive names, and structured guides, to improve readability, enable collaboration, and explain complex logic or code intent.

1.5 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.5.a Students formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models, and algorithmic thinking in exploring and finding solutions.	K-2.1.5.a1 Identify a problem and choose the appropriate digital tools to explore and find solutions to the problem through the use of a step-by -step plan, with guidance and support.	3-5.1.5.a1 Plan implement a design process in which they explore solutions to a problem and use digital tools to analyze data, create models, and represent collected data (ex: spreadsheets, graphs, charts, tables, presentation, infographics), in a way that can be shared with others, with guidance.	6-8.1.5.a1 Solve problems and make decisions by collecting data or identifying relevant data sets, using digital tools (ex: sheets, surveys) to analyze data, and represent their findings through various ways.
1.5.b Students 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.	K-2.1.5.b1 Utilize an age-appropriate digital tool to collect, organize and represent data (ex: online surveys, spreadsheets, graphs, charts, etc.) K-2.1.5.b2 Use data to look for similarities and identify patterns and categories within the data set (ex: simple, data mining) with guidance and support.	3-5.1.5.b1 Select and utilize an age-appropriate digital tool to represent data (ex: spreadsheets, digital graphs/charts), with guidance and support from adults. 3-5.1.5.b2 Use data to discuss findings and share conclusions with others (ex: presentation app/website).	6-8.1.5.b1 Break problems into parts, extract key information and develop descriptive models to understand complex systems or lead problem solving tasks.

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1.5 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.5.c Students break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.	K-2.1.5.c1 Break a problem into smaller parts, identify key information, and use age-appropriate digital tools to help with problem solving(ex: online whiteboard, online mindmapping tools, digital outline) with guidance and support.	3-5.1.5.c1 Break a problem into smaller parts, identify patterns and key information, and use age-appropriate digital tools to brainstorm a problem solving plan (ex: online whiteboard, online mapping tools, digital outline) either collaboratively or independently.	6-8.1.5.c1 Use digital tools to ask questions to an audience and digitally collect data, and analyze the findings.
1.5.d Students understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.	K-2.1.5.d1 Define and give examples of automation (ex: thermostat controls temperature, buttons pressed on toys) to make various sounds.	3-5.1.5.d1 Complete a coding task with coded actions (ex: HTML, block-based coding, Python) either collaboratively or independently.	6-8.1.5.d1 Use technology-assisted methods to break problems down into smaller, more manageable parts by finding patterns or other methods of decomposition.
1.5e Students will learn about age-appropriate algorithms, including their development, combination, and decomposition.	K-2.1.5.e1 Complete a simple coding task with at least 3-5 coded actions (ex: HTML, block-based coding, Python) with guidance and support. K-2.1.5.e2 Model daily processes by creating and following algorithms that include sequence, events, and iteration to complete tasks.	3-5.1.5e1 Use digital tools to identify and create algorithms. 3-5.1.5e2 Create a visual or textual representation of algorithms that include sequence, events, iteration, selection, and variables to solve a problem or complete a task.	6-8.1.5.e1 Use algorithm design to develop step-by-step instructions for solving a problem. 6-8.1.5.e2 Design algorithms, using human-centered design principles such as empathy, user needs and requirements, and accessibility.

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1.5 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.5f Students will learn about how computers collect and store data so it can be analyzed, and practice processing data effectively.	K-2.1.5.f1 Collect numeric and non-numeric data using multiple methods, including observation, measurement, and survey. K-2.1.5.f2 Evaluate different representations of the same data for accuracy, clarity, and accessibility. K-2.1.5.f3 Explore how patterns can be used by people and machines to make predictions and classify objects into categories.	3-5.1.5.f1 Collect different types of data, using computational tools (ex: sensors, cameras, online surveys). 3-5.1.5.f2 Investigate a data question involving relationships between multiple attributes. 3-5.1.5.f3 Explore the relationship between the properties of training data (ex: size, features, biases) and an AI model's output.	6-8.1.5.f1 Use computational tools such as spreadsheets to collect and organize quantitative and qualitative data and produce metadata. 6-8.1.5.f2 Create data visualizations to demonstrate how different design choices can affect a data visualization's clarity, visual appeal, accessibility, and capacity to accurately communicate insights from data investigations. 6-8.1.5.f3 Evaluate the quality and limitations of a dataset for answering different data questions.

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1.6 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.6.a Students will choose appropriate platforms and digital tools for meeting the desired objectives of their creation or communication.	K-2.1.6.a1 Introduce and use age-appropriate digital tools (ex: art creation programs, video production, photography, presentations, video media, green screen, stop motion animation) for producing new creations or published communications using appropriate digital etiquette with guidance and support. K-2.1.6.a2 Use digital tools to ask questions and digitally collect data, with guidance and support.	3-5.1.6.a1 Evaluate and utilize the features of a variety of digital tools (ex: including, but not limited to: adding video/audio, digital collaboration tools, tools affecting the aesthetics of the piece) as well as methods for sharing/publishing for producing new creations or communications with teacher support, following appropriate digital etiquette. 3-5.1.6.a2 Use digital tools to ask questions and collect data.	6-8.1.6.a1 Choose from available platforms and tools to meet the designated objectives of their creation or communication.
1.6.b Students will create original works or responsibly repurpose or remix digital resources into new creations.	K-2.1.6.b1 Use age appropriate digital tools to create original and remixed work, with respect to intellectual property with guidance and support. K-2.1.6.b2 Use digital tools to identify patterns in order to solve problems, with guidance and support.	3-5.1.6.b1 Learn and apply strategies to responsibly remix creative work, respecting digital citizenship copyright , both collaboratively and independently. 3-5.1.6.b2 Use digital tools to find patterns in order to solve complex problems.	6-8.1.6.b1 Create original works, or repurpose/remix digital resources into new creations, while demonstrating an understanding of digital citizenship (ex: intellectual property rights or copyrights).

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1.6 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.6.c Students will use digital tools to visually communicate complex ideas to others.	K-2.1.6.c1 Observe and participate in the communication of ideas using a variety of digital tools (ex: video reflections, interactive notebooks, audio recording, as well as visual representation) with guidance and support.	3-5.1.6.c1 Create digital artifacts (ex: presentations, data collection, models, audio/video, websites, and digital art) to display knowledge and communicate ideas clearly to a variety of audiences, both collaboratively and independently.	6-8.1.6.c1 Create or incorporate digital content to communicate complex ideas clearly and effectively to a variety of audiences.
1.6.d Students will publish or present content that customizes the message and medium for their intended audiences.	K-2.1.6.d1 Explore a variety of digital tools (ex: drawing/ art programs, video production, green screen, digital art to create and communicate an idea to a variety of audiences) with guidance and support. K-2.1.6.d2 Discuss different audiences and how presentations can change based on audience.	3-5.1.6.d1 Utilize digital tools to create, share, communicate, and publish work effectively (ex: video/ audio creation, social media, spreadsheets, blogs, presentation platforms, word processing, and digital art platforms). 3-5,1.6.d2 Identify the intended audience and select appropriate platform medium when creating digital pieces, presenting, and collaborating to communicate ideas to the audience.	6-8.1.6.d1 Publish or present original content to a predetermined audience that appropriately customizes the message and medium.

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1.7 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.7.a Students will use digital tools to connect with peers from a variety of backgrounds recognizing diverse viewpoints and broadening mutual understanding.	K-2.1.7.a1 Use digital tools and resources (ex: digital resources, virtual field trips, virtual reality, video media, and social media), to understand the similarities and differences of others in school, community, and beyond with guidance and support.	3-5.1.7.a1 Use digital tools and resources (ex: presentations, videos, or various digital media platforms) to connect and collaborate with authentic audiences from a variety of backgrounds and cultures to enrich learning experiences.	6-8.1.7.a1 Use digital tools and resources to connect and collaborate with authentic audiences from various backgrounds and cultures to broaden mutual understanding and learning, while using appropriate digital citizenship skills.
1.7.b Students will use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.	K-2.1.7.b1 Use digital tools to collaborate with team members in a digital workspace with guidance and support.	3-5.1.7.b1 Use digital tools to learn how to collaborate with team members in various roles in a digital workspace (ex: sharing and respecting digital work within a team workspace, assuming team roles and working together to create video/ green screen production, stop-motion animation, and various other forms of digital creations) .	6-8.1.7.b1 Select and use digital tools in diverse collaborative teams within the classroom, assuming specific roles, responsibilities, and perspectives other than your own, to contribute effectively toward a common goal.
1.7.c Students will contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.	K-2.1.7.c1 Respect the interest of others by collaborating to share ideas, experiences, and opinions (ex: virtual collaboration, presentation, and discussion boards) with guidance and support.	3-5.1.7.c1 Use a variety of digital resources to collaborate with mutual respect (ex: video conferencing, commenting tools, slide decks, and documents).	6-8.1.7.c1 Select and use digital tools in diverse collaborative teams outside the classroom, assuming specific roles, responsibilities, and perspectives other than their own, to contribute effectively toward a common goal.

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1.7 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.			
Concepts	**K-2**	**3-5**	**6-8**
1.7.d Students will explore local and global issues and use collaborative technologies to work with others to investigate solutions.	K-2.1.7.d1 Use digital tools to collaborate with others to examine problems from school, community, and beyond with guidance and support. K-2.1.7.d2 Use digital tools to collaborate with school, community, and beyond to solve problems with guidance and support.	3-5.1.7.d1 Use digital tools to collaborate with peers, experts, and community members to examine problems from multiple viewpoints (ex: video/voice conferencing). 3-5.1.7.d2 Collaborate digitally with others to understand multiple perspectives while exploring both local and global issues to solve problems with guidance and support (ex: project-based learning and community problem solving).	6-8.1.7.d1 Use collaborative technologies to connect with others - including peers, experts, and community members - to learn about issues and problems or to gain diverse local and global perspectives. 6-8.1.7.d2 Use collaborative technologies and assume roles within digital creations while maintaining digital citizenship within the team digital workspace to investigate and develop solutions to local and global issues.

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Resources

Building and Using Evidence in Data Science Education, Data Science 4 Everyone (2025), University of Chicago Center for RISC, The Learning Agency, Concord Consortium (2025), https://www.datascience4everyone.org/teach-data-science.

Day of AI Curriculum, MIT RAISE (2025), https://dayofai.org/curriculum/.

Digital Citizenship Curricular Framework for PK-12, Dr. LeeAnn Lindsey and Dr. Kristen Mattson (2021), https://www.edvolvelearning.com/framework.html.

Laudato Si, Pope Francis, Vatican City, Italy: May 2015, p. 38.

ISTE Standards, International Society for Technology in Education (2024), iste.org/standards.

Kentucky Academic Standards for Technology: Kindergarten through Grade 12, Kentucky Department of Education (2017), www.education.ky.gov/curriculum/standards/kyacadstand/Documents/KAS_Technology.pdf.

Kentucky Academic Standards for Computer Science: Kindergarten through Grade 12, Kentucky Department of Education (2017),www.education.ky.gov/curriculum/standards/kyacadstand/Documents/Kentucky_Academic_Standards_Computer_Science.pdf.

Revised PreK-12 Computer Science Standards: Draft 2.0 for Public Comment, Computer Science Teachers Association (2025), https://csteachers.org/wp-content/uploads/2025/05/Draft-2.0-Revised-PreK-12-CS-Standards.pdf.

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