Chariho Regional School District

Technology Education Curriculum

Grades K-8

~~March 28, 2017~~

June 2022

Note for School Committee Review:

- All information and content highlighted in yellow is new to the document
- All information and content that is crossed out is being removed from the document
- Page 10 of this document contains links to the new curriculum documents for each of the grade levels. The K-8 Technology Education Committee has adopted new standards so you will not see any highlights or cross-outs in these documents. More information will be provided during the presentation.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Table of Contents

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Technology Education Task Force Membership

Kristen Anderson
Michael Comella
Michelle Conary Brittain
Kate Ficarra
Sherri Jackson
~~Madeline Crocker~~
~~Jane Daly~~
~~Heather Gray~~
Diane Kissinger
Bryan Lucas
~~Karen Mann~~
~~James McMonigle~~
Jeffrey Scanapieco
Susie Scanapieco
Alison Ward

Epistemological Foundations

The Chariho Regional School District believes that students learn best when they are actively engaged in and personally responsible for the learning process. Students need a safe and positive environment in which to talk purposefully about learning, to experience learning, and to observe learning. Learning is enhanced when students have an interest in and choice about what they learn. Students should be engaged in meaningful learning experiences that match their developmental status.

New learning builds on previous knowledge through a process that is challenging and rigorous. That process must encourage students to problem-solve and to think originally, critically, and creatively. Thinking and problem-solving are closely linked to a demanding core of content knowledge. Learning is most quickly assimilated when connected to student goals, when students evaluate their own work and learning habits, and when instruction appeals to a variety of learning modalities and talents.

In an environment of high expectations, sustained and directed student effort and expert teaching practices determine the extent of learning. Our schools and District will organize to encourage and support both.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Introduction

The Chariho Regional School District will ensure the use of technology as a tool in the educational process to improve student achievement as evidenced by reaching state and national standards. All students will be provided with the opportunity to acquire the knowledge and skills necessary to realize their potential, and to become productive citizens. Students will be provided routine access to technology as detailed in the Chariho District Technology Plan.

We live in the Information Age. This age and the culture in which we live are increasingly being supported and changed by a wide variety of technologies. Technology is rapidly developing and changing. Chariho is responsible for preparing its students to be productive, contributing members of our society. This is done through effective, efficient, and meaningful instruction. In this regard, Chariho will continue to lead statewide efforts in implementing computer science instruction. This program was established by the Governor's office in 2016 and is referred to as CS4RI or Computer Science for Rhode Island. The objectives of this program are to create a computer science curriculum that spans grades K-12 and to ensure that our graduates are equipped with the skills necessary to create and sustain technology based industries in the state of Rhode Island. Accordingly, this curriculum plan is put forward with the knowledge that innovation and change will likely occur throughout this timeframe, and that this change will require close coordination with all stakeholders.

We are preparing our students to live and work in the 21st century economy where the workplace and the home are technologically oriented. This new environment will demand workers and parents who can use higher order thinking skills. Jobs and community participation will require educated citizens who can solve problems, understand complex terminology, communicate clearly, and make sense out of rapidly changing information

To this end, we in the Chariho Regional School District believe that technology exists as a very powerful and essential tool in the education process for both students and staff. Technology should be part of every curriculum at every level of instruction. "All technologies, at every level, explored by everyone" is a broad way to state the impact and importance of this fact of life.

Since technology empowers students to improve achievement, technology needs to be incorporated into the regular classroom curriculum as a seamless component of the delivery of instruction. Technology should not be treated as a stand-alone or "extra" subject, but incorporated into all students' academic lives as it is in the wider world of work, personal interests and recreation. Assessments will rely heavily on authentic project-based.

The Chariho Regional School District will provide computers and Internet capabilities to each classroom kindergarten through grade 12, as detailed in the Chariho District Technology Plan. Students in grades five through eight will attend computer literacy classes focused on keyboard instruction, introduction, reinforcement and mastery of essential computer software, principles and applications of computer science, along with Internet safety.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Every student will understand social, ethical and legal implications of using computer technology. Furthermore, students will be able to effectively use, and in some cases, create digital resources. Students will realize the power given by technology to communicate and collaborate with others, collect information, and create new knowledge. Students will routinely use productivity, communication and research tools to understand concepts, produce original work, present ideas, solve problems and make decisions based on real life situations and issues.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

District Mission

The Chariho Regional School District ensures that all students meet high academic standards and are prepared for lifelong learning and productive global citizenship.

District Vision

With a commitment to continuous improvement, the District's highly-qualified staff engages with students in state-of-the-art facilities to master challenging content, to promote creativity, and to foster critical thinking. The District is recognized by the community as its greatest asset.

District Beliefs

We believe that high academic standards and research informed decision making are critical…

- Rigorous academic standards and high expectations, along with a robust and responsive system of supports, are the foundation of the school district.
- All professionals operate from a belief that all students can learn at high levels and meet or exceed demanding standards.
- All students at every level must be engaged in challenging academic experiences.
- Instructional and program decisions must be data-informed and evidence-based.
- Learning is a continuous lifelong process.
- Schools must prepare students to be creative and critical thinkers, problem solvers, and effective communicators.
- The physical, social, and emotional wellness of every child is necessary for optimum learning along with a robust support system.

We believe that the larger community must be fully engaged in the learning process…

- Education is a shared responsibility of students, parents, staff, and the community.
- Students thrive when supported, nurtured, and engaged by the community.
- In an environment that emphasizes school safety, everyone must be treated with kindness, dignity, and respect.
- Customer service must be a priority.
- Schools must prepare students to be team members and leaders, civic-minded, community contributors, and productive citizens of a global society.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Lists of Technology Curriculum Documents

Grades K-8 Technology Grade Span Curriculum Documents

(Click on each grade level below to view the Grade Level curriculum)

K-2 Curriculum

3-5 Curriculum

6-8 Curriculum

~~Essential Conditions~~

~~Necessary conditions to effectively leverage technology for learning:~~

~~Shared Vision Proactive leadership in developing a shared vision for educational technology among all education stakeholders including teachers and support staff, school and district administrators, teacher educators, students, parents, and the community.~~

~~Empowered Leaders Stakeholders at every level empowered to be leaders in effecting change.~~

~~Implementation Planning A systemic plan aligned with a shared vision for school effectiveness and student learning through the infusion of information and communication technologies (ICT) and digital learning resources.~~

~~Consistent and Adequate Funding Ongoing funding to support technology infrastructure, personnel, digital resources, and staff development.~~

~~Equitable Access Robust and reliable access to current and emerging technologies and digital resources, with connectivity for all students, teachers, staff, and school leaders.~~

Skilled Personnel Educators, support staff, and other leaders skilled in the selection and effective use of appropriate ICT resources.

Ongoing Professional Learning Technology-related professional learning plans and opportunities with dedicated time to practice and share ideas.

Technical Support Consistent and reliable assistance for maintaining, renewing, and using ICT and digital learning resources.

Curriculum Framework Content standards and related digital curriculum resources that are aligned with and support digital-age learning and work.

Student-Centered Learning Planning, teaching, and assessment center around the needs and abilities of students.

Assessment and Evaluation Continuous assessment, both of learning and for learning, and evaluation of the use of ICT and digital resources.

Engaged Communities Partnerships and collaboration within communities to support and fund the use of ICT and digital learning resources.

Support Policies Policies, financial plans, accountability measures, and incentive structures to support the use of ICT and other digital resources for learning and in district school operations.

Supportive External Context Policies and initiatives at the national, regional, state, and local levels to support schools and teacher preparation programs in the effective implementation of technology for achieving technology as well as ICT standards.

Implementation of Curriculum

In Grades K-4, the Library Media Specialists will implement most of the standards listed in this curriculum. In Grades 5-8, Technology Teachers will implement most of the standards listed in this curriculum. In addition, all teachers should refer to other Chariho curricula which may include alignment to many of these standards. For students to realize full understanding and application

of these standards, all teachers shall be provided professional development to be made aware of their role in supporting the Grades K-8 Technology Education Curriculum.

Transforming Learning Environments with Technology

Technology-Enabled Strategies to Personalize Student Learning

Less	More
Teacher-directed, memory-focused instruction	Student-centered, performance-focused learning
Lockstep, prescribed-path progression	Flexible progression with multi-path options
Limited media, single-sense stimulation	Media-rich, multi-sensory stimulation
Knowledge from limited, authoritative sources	Learner-constructed knowledge from multiple information sources and experiences
Isolated work on invented exercises	Collaborative work on authentic, real-world projects
Mastery of fixed content and specified processes	Student engagement in definition, design and management of projects
Factual, literal thinking for competence	Creative thinking for innovation and original solutions
In-school expertise, content and activities	Global expertise, information and learning experiences
Stand-alone communication and information tools	Converging information and communication systems
Traditional literacy and communication skills	Digital literacies and communication skills
Primary focus on school and local community	Expanded focus including digital global citizenship
Isolated assessment of learning	Integrated assessment for learning

National Educational Technology Standards for Teachers © 2010 Hawker Brownlow Education • IST3926

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Rhode Island K-12 Computer Science Education Standards

Guiding Principles:	
The following Guiding Principles helped establish our aspirational vision and informed the development of K-12 Computer Science education standards for Rhode Island.	
Broaden Participation & Equity	All students regardless of age, race, ethnicity, gender, socioeconomic status, special needs, English proficiency, or any other demographic will have the opportunity to participate in computer science.The content and practices of the standards will be accessible to all.
Stimulate Learning & Curiosity	The standards at all grade levels will connect to appropriate real world challenges as a means to motivate and empower, promote individual growth, and spark a desire for life-long learning.
Build Connections Across Disciplines	Computer science will complement other disciplines and build upon and develop student knowledge.,The standards will connect with practices and concepts from the Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS) to promote learning across disciplines.
Encourage Workforce/Economic Development	Students will have the skills, practices, and knowledge to participate in a world that is increasingly influenced and shaped by technological advancements.,The standards will help to prepare students who can adapt and prosper under constantly changing conditions.
Support Teachers	The standards will identify focused learning progressions and multi-tier teaching approaches that meet the needs of all learners.

Inform with Current Research	The standards will be based on current professional research and practice in computer science education and pedagogy.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Rhode Island K-12 Computer Science Education Standards

Equity in Computer Science Education

The Rhode Island Computer Science Education Standards Advisory Committee believes that equity and broadening participation must be at the forefront of the computer science initiative to ensure that all Rhode lsland students benefit. We strongly agree with the position identified in the K-12 Computer Science Framework (2016) which states: When equity exists, there are appropriate supports based on individual students' needs so that all have the opportunity to achieve similar levels of success. Inherent in this goal is a comprehensive expectation of academic success that is accessible by and applies to every student. . . . equity, inclusion, and diversity are critical factors in all aspects of computer science.(pp.23, 26)1 We constantly returned to this issue throughout the development of the standards. We worked to ensure equity is embedded in the standards themselves, the descriptions, and the accompanying suggested activities. Additionally, standards can be met without computing devices or with a limited amount of available hardware so implementation is possible for all schools.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Computational Thinking

Computational thinking involves solving problems, designing systems, and understanding human behavior, by

drawing on the concepts fundamental to computer science. . . . This kind of thinking will be part of the skill set of, not only other scientists, but of everyone else. Ubiquitous computing is to today as computational thinking is to tomorrow. Ubiquitous computing was yesterday's dream that become today's reality; computational thinking is tomorrow's reality. – Jeannette Wing, March 2006 Communications of the ACM, 49(3), 33-35.

Computational thinking is central to the standards and a necessary skill for participation in today's society. It can be applied broadly to solving complex problems in other disciplines and can be taught across the K-12 curriculum.1

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Standards

Standards represent pathways that are realistic expectations for all students. They identify the knowledge, practices, and skills in computer science that all students should know and be able to do at each level in their education. They serve as specific performance measures and are used as reference points for planning and teaching, including but not limited to, the development of curriculum frameworks, curricula, lesson plans, instruction, professional development, and assessment. The standards are written to be aspirational – they represent the concepts and practices that all students need to master. They are designed to inform, encourage, and drive a sustainable computer science education program, and were developed to be cognitively appropriate for each grade band. Careful attention was paid to word choice in the standards to ensure measurability.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

Grade Bands

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

The decision to adopt and use the grade bands identified in the CSTA K-12 Standards document – K-2, 3-5, 6-8, 9-12 – allows for increased flexibility for implementation in schools. Although the CSTA separated grades 9-12 into two levels – 9-10, 11-12 – with the 11-12 level designed for students enrolled in more rigorous courses, we decided that it was appropriate to extend the 9-10 level to 9-12 at this time since our goal focused on standards for ALL students.

Reference: https://www.ride.ri.gov/Portals/0/Uploads/Documents/Instruction-and-Assessment-World-Class-Standards/Other-Subjects/RI_CS_Ed_Standards_May2018.pdf

~~2016 International Society for Technology in Education (ISTE) Standards for Students~~

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. Students:~~
    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.~~
    b. ~~build networks and customize their learning environments in ways that support the learning process.~~
    c. ~~use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.~~
    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.~~

2. ~~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:~~
    a. ~~cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.~~
    b. ~~engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.~~
    c. ~~demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.~~

d. manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

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. Students:
   a. plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
   b. evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.
   c. curate information from digital sources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.
   d. build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

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. Students:
   a. know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
   b. select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
   c. develop, test and refine prototypes as part of a cyclical design process.
   d. exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

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. Students:
   a. formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
   b. collect data or identify relevant data sets, use digital tools to analyze them, and represent data
   c. in various ways to facilitate problem-solving and decision-making.
   d. break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem-solving.
   e. understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

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. Students:
    a. choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
    b. create original works or responsibly repurpose or remix digital resources into new creations.
    c. communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
    d. publish or present content that customizes the message and medium for their intended audiences.

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. Students:
    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.
    b. use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
    c. contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
    d. explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

~~Grade Level Expectations~~

~~Standard 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.~~

~~Grades K-1~~ ~~1b) With guidance from an educator, students learn about various technologies that can be used to connect to others or make their learning environments personal and select resources from those available to enhance their learning.~~ ~~i) Navigate a tablet to access a variety of district endorsed, teacher-selected apps, websites, and software to enhance and personalize their learning (e.g. Symbaloo).~~
~~Grades 2-4~~ ~~1a) With guidance from an educator, students consider and set personal learning goals and utilize appropriate technologies that will demonstrate knowledge and reflection of the process.~~ ~~i) Articulate and set personal learning goals and using appropriate technology to achieve them (e.g. STAR).~~ ~~ii) Reflect on the learning process to improve learning outcomes.~~ ~~1b) With guidance from an educator, students learn about various technologies that can be used to connect to others or make their learning environments personal, and select resources from those available to enhance their learning.~~

~~i) Navigate a personal computer to access a variety of district endorsed, teacher-selected apps, websites, and software to enhance and personalize their learning (e.g. Symbaloo, Google Classroom, Blendspace, Edpuzzle).~~

~~1c) With guidance from an educator, students recognize performance feedback from digital tools, make adjustments based on that feedback and use age-appropriate technology to share learning.~~

~~i) Use technology to seek feedback (e.g. Google Classroom, Kahoot, Plickers) and demonstrate their learning in a variety of ways.~~

~~1d) With guidance from an educator, students explore a variety of technologies that will help them in their learning and begin to demonstrate an understanding of how knowledge can be transferred between tools.~~

~~i) Understand the fundamental concepts of technology operations (e.g. recognizing icons, homescreens, dropdown menus, formating and editing tools).~~

~~**Grades 5-6**~~

~~1a) Students develop learning goals in collaboration with an educator, select the technology tools to achieve them, and reflect on and revise the learning process as needed to achieve goals.~~

~~i) In collaboration with an educator, students participate in the selection of content used for learning goals.~~

~~ii) In collaboration with an educator, students participate in the selection of technology software applications used to organize and present content, to include: word processors, presentation software, and data/spreadsheet software.~~

~~iii) With support from an educator, students utilize software tools contained within available student software to include: Google Docs, Google Slides, Google Sheets, along with online resources such as Prezi and Easybib.~~

~~iv) Students receive instructional support while developing skills in using software applications to complete projects.~~

~~1b) With the oversight and support of an educator, students build a network of peers within school policy in order to develop both academically and socially.~~

i) With support from an educator, students develop the skills to work purposefully and cooperatively in groups.

ii) With support from an educator, students develop the skills to work collaboratively on projects in order to use technology effectively.

1c) Students seek feedback from both people and features embedded in digital tools, and use age-appropriate technology to demonstrate learning.

i) Students use feedback from teachers and through peer editing to enhance quality of work.

ii) Students use feedback from digital tools such as spell and grammar checks in word processors to enhance the quality of work.

iii) Students demonstrate learning through age-appropriate technology.

1. Examples include but not limited to: Google Slides, Google Forms, Google Classroom, and Kahoot.

1d) Students explore age-appropriate technologies and begin to transfer their learning to different tools or learning environments.

i) Students adapt software skills from one application to another leveraging intuitive and common design features of classroom software.

1. Students identify how to use basic input and output devices.
2. Students identify correct terminology used to describe basic hardware, software, and networking functions.
3. Students create word processed documents that employ a variety of formatting and graphical features.
4. Students create presentations that contain a variety of formatting and graphical features.
5. Students create spreadsheet tables and charts that contain basic formatting features.

ii) Students develop skills in overarching software categories (ie: word processing not just Google Docs)

1. Students select and apply digital tools to collect, organize, and analyze data to evaluate theories.
2. Students understand the strengths and weaknesses associated with presenting ideas as documents, presentations, or graphical spreadsheets.
3. Students are capable of navigating the network, accessing applications, and utilizing network hardware.

a. Moving and organizing documents electronically.
b. Uploading and downloading assignments and projects.
c. Accessing and using add-on software to expand the capabilities of software.
d. Copying and pasting content between software applications.
e. Adding favorites.
f. Using hyperlinks.

Grades 7-8

1a) Students articulate personal learning goals, select and manage appropriate technologies to achieve them, and reflect on their successes and areas of improvement in working toward their goals.

i) In collaboration with an educator, students lead in the selection of content used for learning goals.

1. e.g. Dark Side of the Internet (Docs), Elections (Sheets).

ii) In collaboration with an educator, students lead in the selection of technology tools used to organize and present content to include: word processors, presentation software, and data/spreadsheet software.

iii) Students independently utilize tools within given software such as Google products to create and illustrate a document or presentation to include: Google Docs, Google Slides, Google Sheets, along with online resources such as Prezi and Easybib.

iv) Students gather data, examine patterns, and apply information for decision making using digital tools and resources.

1b) Students identify and develop online networks within school policy, and customize their learning environments in ways that support their learning, in collaboration with an educator.

i) Students practice skills in working purposely and cooperatively in groups within their own classroom using online networks such as Google apps for education and other approved educational software.

ii) Students engage in projects requiring collaboration with peers outside of their classroom using online networks such as Google Classroom and other approved educational software.

1c) Students actively seek performance feedback from both people and features embedded in digital tools to improve their learning process, and select technology to demonstrate their learning in a variety of ways.

i) Students actively seek performance feedback from peers, educators and digital tools to effectively solve problems.

1. Students leverage the collaborative abilities inherent in Google applications and Google classroom.
2. Students receive automated feedback from online assessment tools, such as Kahoot and Socrative.

ii) Students use technology in solving problems to demonstrate their learning in a variety of ways.

1. Examples include but not limited to: Google Sheets, Socrative, GoFormative, and Quizizz

1d) Students are able to navigate a variety of technologies and transfer their knowledge and skills to learn how to use new technologies.

i) Students will demonstrate their ability to transfer skills from one application to another within a software category (e.g. Google Does to MS Word).

1. Students create word processed documents that employ the majority of formatting and graphical features.
2. Students create spreadsheet tables and graphs that employ a variety of formatting and graphical features.
3. Students create presentations that contain a wide variety of formatting and graphical features.
4. Students recognize the similarities of tabs and toolbars from one application to another.

1e) With guidance from an educator students continue to build a network of peers within school policy in order to develop both academically and socially.

i) With support from an educator, students practice the skills to work purposefully and cooperatively in groups.

ii) With support from an educator, students practice the skills to work collaboratively on projects in order to use technology effectively.

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Standard 2: **Digital Citizen -** Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act in ways that are safe, legal and ethical.

Grades K-1

2b) With guidance from an educator, students understand how to be careful when using devices and how to be safe online, follow safety rules when using the internet and collaborate with others.

i) Students will learn positive, safe, and appropriate behaviors when using technology (e.g. using two hands to carry a tablet, having a calm body, keeping food/drink away).

Grades 2-4

2a) Students practice responsible use of technology through teacher-guided online activities and interactions to understand how the digital space impacts their life.

i) Students will learn about their digital identity and the permanence of actions in the digital world.

2b) With guidance from an educator, students understand how to be careful when using devices and how to be safe online, follow safety rules when using the internet and collaborate with others.

i) Students will learn positive, safe, and appropriate behaviors when using technology.

ii) Students will use appropriate interactions online and when collaborating.

iii) Students will not change desktops, settings, or assignments. They will not add or delete apps/programs.

2e) With guidance from an educator, students learn about ownership and sharing of information, and how to respect the work of others.

i) Students will learn about plagiarism, and that they must cite where they have found information/photos.

2d) With guidance from an educator, students demonstrate an understanding that technology is all around them and the importance of keeping their information private.

i) Students will learn about the importance of not disclosing personal/location information to websites, blogs, etc.

Grades 5-6

2a) Students demonstrate an understanding of the role an online identity plays in the digital world and learn the permanence of their decisions when interacting online.

i) Students develop an understanding of the importance that an online identity plays in the digital world.

2b) Students practice and encourage others in safe, legal and ethical behavior when using technology and interacting online, with guidance from an educator.

i) Students use newly acquired information in an ethical manner.

ii) Students are introduced to a variety of technology applications and make informed choices for their ethical employment.

iii) Students demonstrate knowledge of illegal downloading.

iv) Students take a proactive stand against cyber bullying.

v) Students identify software or technology that is valuable to them, and describe how it improves their ability to communicate, be productive, or achieve personal goals.

2c) Students learn about, demonstrate and encourage respect for intellectual property with digital media when using and sharing the work of others.

i) Students understand the concept of plagiarism and how it impacts their use of technology in the creation of student work.

~~2d) Students demonstrate an understanding of what personal data is, how to keep it private and how it might be shared online.~~

~~**Grades 7-8**~~

~~2a) Students manage their digital identities and reputations within school policy, including demonstrating an understanding of how digital actions are never fully erasable.~~

~~i) Students understand the importance that an online identity plays in the digital world.~~

~~ii) Students understand the permanence of the digital footprint that is created by their online activity.~~

~~2b) Students demonstrate and advocate for positive, safe, legal and ethical habits when using technology and when interacting with others online.~~

~~i) Students understand how to use resources responsibly.~~

~~ii) Students demonstrate knowledge in all areas of safe and ethical practices in the use of information technology.~~

~~iii) Students demonstrate through their personal behavior their understanding of the ethical and appropriate use of technology.~~

~~iv) Students demonstrate through their personal behavior their understanding of the dangers and risks of technology.~~

~~v) Students examine issues related to computer etiquette and discuss means for encouraging more effective use of technology to support effective communication, collaboration, and personal productivity. (e.g. Email etiquette).~~

~~2c) Students demonstrate and advocate for an understanding of intellectual property with digital media including copyright, permission and fair use.~~

~~i) Students understand the consequences of plagiarism and how to appropriately cite sources in order to give credit to original owners of ideas.~~

ii) Students create a variety of media products that include appropriate citation and attribution elements.

2d) Students demonstrate an understanding of what personal data is and how to keep it private and secure.

i) Students demonstrate awareness of terms such as encryption, HTTPS, password, cookies, and computer viruses.

ii) Students explore issues of identity theft.

iii) Students demonstrate knowledge of the nature and variety of risks and hazards associated with information technology.

Standard 3: **Knowledge Constructor -** Students critically curate a variety of resources using digital tools to construct knowledge, to produce creative artifacts and make meaningful learning experiences for themselves and others.

Grades K-1

3a) With guidance from an educator, students use digital tools and resources, contained within a classroom platform or otherwise provided by the teacher, to find information on topics of interest.

i) Students use district endorsed software/websites/apps to learn new content.

3d) With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.

i) Students share ideas using digital tools (e.g. SMART Board, Tablets) to explain or show their thinking.

Grades 2-4

3a) With guidance from an educator, students use digital tools and resources, contained within a classroom platform or otherwise provided by the teacher, to find information on topics of interest.

i) Students utilize district endorsed software/websites/apps to learn new content.

3b) With guidance from an educator, students become familiar with age-appropriate criteria for evaluating digital content.

i) Students learn how to evaluate the accuracy, credibility, and importance of information from media, data, and other digital resources.

3c) With guidance from an educator, students explore a variety of teacher-selected tools to organize information and make connections to their learning.

i) Select appropriate applications (e.g. Google Docs, Slides, Sheets, Padlet) to organize assignments.

3d) With guidance from an educator, students explore real-world issues and problems and share their ideas about them with others.

i) Students share ideas using digital tools (e.g. SMART Board, laptops) to explain or show their thinking.

ii) Students collaborate online (e.g. Google Classroom) to explore and share their thinkings on various assignments/discussions/topics.

Grades 5-6

3a) Students collaborate with a teacher to employ appropriate research techniques to locate digital resources that will help them in their learning process.

i) Students demonstrate a basic understanding of search engine tools.

ii) Students use common web search engines and basic search functions to locate information from a variety of sources.

iii) Students research topics of their own choosing.

iv) Students are familiar with network architecture (e.g. Google Drive and shared hard drives).

v) Students use help functions to troubleshoot applications.

3b) Students learn how to evaluate resources for appropriateness and comprehensiveness by analyzing the currency,

~~relevancy, accuracy, authority, and purpose of the source.~~

~~i) Students recognize bias in digital resources.~~

~~3c) Using a variety of strategies, students organize information and make meaningful connections between resources.~~

~~3d) Students explore real-world problems and issues and collaborate with others to find answers or solutions.~~

~~i) Students with instruction from an educator explore real-world topics with digital tools and collaborate with others to find answers or solutions.~~

~~ii) Students use information tools to collect, organize, and evaluate information relevant to a real-world problem.~~

~~iii) Students create documents and spreadsheets that provide clear evidence of personal expression in a textual and graphically rich fashion that deal with real-world issues, such as populations and elections.~~

~~Grades 7-8~~

~~3a) Students demonstrate and practice the ability to effectively utilize research strategies to locate appropriate digital resources in support of their learning.~~

~~i) Students demonstrate an advanced understanding of search engine tools.~~

~~ii) Students conduct complex searches using Boolean terms.~~

~~iii) Students navigate, troubleshoot, and resolve issues associated with employing technology in a network environment.~~

~~3b) Students practice and demonstrate the ability to evaluate a variety of resources for appropriateness and comprehensiveness by independently analyzing the currency, relevancy, accuracy, authority, and purpose of the source.~~

~~i) Students apply reliable resources to learning based on the appropriateness to specific tasks.~~

3c) Students locate and collect resources from a variety of sources and organize assets into collections for a wide range of projects and purposes.

i) Using a variety of strategies, students organize information and data in order to make meaningful connections and conclusions.

ii) Students use the online public access catalog (e.g. Destiny) to locate materials in the library.

3d) Students explore real-world issues and problems and actively pursue an understanding of them and solutions for them.

i) Students with support from an educator explore real-world topics with digital tools and collaborate with others to find answers or solutions.

ii) Students create documents, presentations and other products that provide clear evidence of personal expression.

iii) Students describe and illustrate a content related concept.

iv) Students select topics for individual research.

Standard 4: **Innovative Designer -** Students use a variety of technologies within a design process to solve problems by creating new, useful or imaginative solutions.

Grades K-1

4a) With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems and share their learning.

i) Students will learn that some questions can be answered/problems can be solved, by using the internet as appropriate.

ii) Teachers will ensure that student use of the internet is both appropriated and in keeping with district safety guidelines.

4b) Students use age-appropriate digital and nondigital tools to design something and are aware of the step-by-step process of designing.

i) Students will use tools to plan and manage a design process within given constraints. (e.g. centers, maker space, Legos, Paint, coding)

4d) Students demonstrate perseverance when working to complete a challenging task.

i) When challenged, students will try again to solve problems (e.g. When building with Legos, if adjustments are needed, they will be made to their design).

Grades 2-4

4a) With guidance from an educator, students ask questions, suggest solutions, test ideas to solve problems and share their learning.

i) Students will use a design process to create artifacts or solve authentic problems.

4b) Students use age-appropriate digital and nondigital tools to design something and are aware of the step-by-step process of designing.

i) Students will use tools to plan and design within constraints (e.g. Padlet, science manipulatives, coding).

4c) Students use a design process to develop ideas or creations, and they test their design and redesign if necessary.

i) Students use Padlet and other district endorsed software products to explore and share design work.

4d) Students demonstrate perseverance when working to complete a challenging task.

i) When challenged, students will try again to solve problems (e.g. When coding, if the programming doesn't give the desired result, that an alternate programming sequence will be attempted or when searching the internet, if the

desired information is not found, reword the search to achieve the intended results.).

Grades 5-6

4a) Students explore and practice how a design process works to generate ideas, consider solutions, plan to solve a problem or create innovative products that are shared with others.

i) Students are provided detailed and extended instruction to the design process.

ii) Students use presentation software to share ideas and the solutions to problems.

iii) Students use graphics-based code to solve geometric and logic problems.

a) Online resources employed in support of standards as suggested by RIDE.

4b) Students use digital and nondigital tools to plan and manage a design process.

i) Students create algorithms using digital and nondigital tools to plan and manage a design process.

ii) Students use Padlet and other district endorsed software products to explore and share design work.

4c) Students engage in a cyclical design process to develop prototypes and reflect on the role that trial and error plays.

i) Through several small projects, students will experience an iterative design and testing process

4d) Students demonstrate perseverance when working with open-ended problems.

i) Reading through code to find and fix errors (i.e Code.org exercises in error analysis).

Grades 7-8

4a) Students engage in a design process and employ it to generate ideas, create innovative products or solveba authentic problems.

i) Students will use the design process to produce a functional application in computer class.

4b) Students select and use digital tools to support a design process and expand their understanding to identify constraints and trade-offs and to weigh risks.

i) Students will be introduced to online simulations.

4c) Students will engage in a design process to develop, test and revise prototypes, embracing the cyclical process of trial and error and understanding problems or setbacks as potential opportunities for improvement.

i) Students will be involved in a process of software design and writing computer code to support their design parameters.

4d) Students demonstrate an ability to persevere and handle greater ambiguity as they work to solve open-ended problems.

i) Students will be challenged to work in text-based coding.

ii) Students will be challenged to address real-world problem solving using digital tools.

Standard 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.

Grades K-1

5a) With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions.

i) Students are introduced to software applications which help solve problems (e.g. Kodables, virtual manipulatives, daily weather tracking).

5b) With guidance from an educator, students analyze age-appropriate data and look for similarities in order to identify patterns and categories.

~~i) Represent and create whole class data sets using software to facilitate problem solving and decisions making (e.g. class survey data on birthdays, favorite food).~~

~~Grades 2-4~~

~~5a) With guidance from an educator, students identify a problem and select appropriate technology tools to explore and find solutions.~~

~~i) Students use software applications to help solve problems (e.g. virtual manipulatives, data collection programs, computer simulations).~~

~~5b) With guidance from an educator, students analyze age-appropriate data and look for similarities in order to identify patterns and categories.~~

~~i) Represent and create whole class and individual data sets using software to facilitate problem solving and decisions making.~~

~~5c) With guidance from an educator, students break a problem into parts and identify ways to solve the problem.~~

~~i) Analyze problems that require specific commands in coding to solve a problem.~~

~~5d) Students understand how technology is used to make a task easier or repeatable and can identify real-world examples.~~
~~i) Students will learn how to use a sequence of steps (e.g. Code.org, Kodable) to create and test automated solutions.~~

~~Grades 5-6~~

~~5a) Students explore or solve problems by selecting technology for data analysis, modeling and algorithmic thinking, with guidance from an educator.~~

i) Students gather and organize data into meaningful tables and graphs.

ii) Students analyze data to draw conclusions.

5b) Students select effective technology to represent data.

i) Students create and format data tables within software programs such as Google Docs and Google Sheets.

ii) Students process data using spreadsheet software such as Google Sheets.

5c) Students break down problems into smaller parts, identify key information and propose solutions.

i) Students use pair programming method to collaboratively solve problems that require a series of specific commands involving algorithmic thinking.

ii) Students use drag-and-drop programming to design a game by creating lines of code to customize their product in a variety of different ways.

5d) Students understand and explore basic concepts related to of computer science, such as automation, patterns and algorithmic thinking.

i) Students understand and explore the following computer science vocabulary terms: Algorithm, blockly, pixel, loop, debugging, conditionals, binary, and event.

ii) Students practice communicating ideas through codes and symbols through the use of digital and nondigital tools involving digital and unplugged activities (e.g. Code.org activities).

iii) Students use drag-and-drop programming in order to solve a variety of problems while employing concepts involving algorithmic thinking.

Grades 7-8

5a) Students practice defining problems to solve by computing using data analysis, modeling or algorithmic thinking.

i) Students explore or solve problems through the use of spreadsheet technology for data analysis.

ii) Students collect and analyze authentic data which lead to informed conclusions.

ii) Students analyze data while employing effective organizations for presentation and display.

iii) Students draw conclusions regarding trends and predicting likely future outcomes.

5b) Students find and organize data then demonstrate the ability to analyze and represent it in ways that supports solutions and decisions, with support from an educator.

i) Students explore and solve complex data management problems using spreadsheet technology while employing clear and concise graphical representations of this data.

ii) Students draw inferences and conclusions from the data analyzed.

5c) Students will use the principles of computer science to create, debug and solve challenges and problems.

i) Students break problems into component parts, identify key pieces, and use that information to problem solve.

ii) Students develop a personalized final project that will engage students in design, testing, and iteration as they come to see that failure and debugging are an expected (and valuable) part of the programming process that makes the end product better (e.g. CS Discoveries Unit 3).

5d) Students demonstrate an understanding of computer science through the use of algorithmic critical thinking to design and automate solutions.

i) Students explore the theories and principles of computer science while solving increasingly challenging problems involving: bug, debugging, program, loop, expression, variable, property, sprite, rotate, scale, boolean, conditionals, expression (e.g. CS Discoveries Unit 3).

ii) Students use text-based programming in order to solve a variety of problems while employing concepts involving algorithmic thinking.

~~Standard 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.~~

~~**Grades K-1**~~ ~~6b) Students use digital tools to create original works.~~ ~~i) Students learn how to use digital resources to create (e.g. Paint, word processing, Padlet, Powerpoint).~~ ~~6c) With guidance from an educator, students share ideas in multiple ways - visual, audio, etc.~~ ~~i) Students learn how to communicate ideas using a variety of digital platforms (e.g. audio recording, voice to text applications, Paint, video).~~
~~**Grades 2-4**~~ ~~6a) With guidance from an educator, students choose different tools for creating something new or for communicating with others.~~ ~~i) Students will be introduced to a variety of tools and how to use them.~~

~~ii) Students will gain a familiarity with the keyboard.~~

~~iii) Students will learn how to log on to personal computers.~~

~~iv) Students will begin to demonstrate the ability to open, save, and close programs.~~

~~v) Educators will support student learning of tools, and differentiate instruction to accommodate student needs and abilities.~~

~~6b) Students use digital tools to create original works.~~

~~i) Students will learn how to use digital resources to create (e.g. word processing, Padlet, Google Does, Google Slides).~~

~~6c) With guidance from an educator, students share ideas in multiple ways—visual, audio, etc.~~

~~i) Students learn how to communicate ideas using a variety of digital platforms (e.g. audio recording, voice to text applications, Paint, video, word processing, Google Classroom).~~

~~6d) With guidance from an educator, students select technology to share their ideas with different people.~~

~~i) Students will publish or present content with a specific message for their intended audience.~~

~~Grades 5-6~~

~~6a) Students recognize and utilize the features and functions of a variety of creation and communication tools.~~

~~i) Students will demonstrate mastery of word processing software and presentation software.~~

~~ii) Students will be instroduced to new transciption technologies to include voice to text.~~

~~iii) Students will be introduced to new emerging technologies that support individuals with disabilities.~~

~~6b) Students create original works and learn strategies for remixing and/or repurposing to create new artifacts.~~

~~i) Students will create documents and presentations which combine research and online resources combined with student interpretations and demonstrations of understanding.~~

~~ii) Students will use technology to select graphic elements.~~

~~6c) Students create digital artifacts to communicate ideas visually and graphically.~~

~~i) Students will use tables, graphs, and images in support of ideas presented in documents and presentations.~~

~~6d) Students learn about audience and consider their expected audience when creating digital artifacts and presentations.~~

~~i) Students will be introduced to the elements of 'high-quality slides" using a rubric.~~

~~6e) Students with the support of educators will develop and enhance their keyboarding ability, known as touch typing. GLE's are 11 words per minute (wpm) for 5th grade and 18 wpm for 6th grade.~~

~~i) Students will practice keyboarding skills during most computer classes, with their progress monitored routinely by an educator.~~

~~ii) Educators will support individual student keyboard by differentiated instruction to accommodate students needs and abilities.~~

~~iii) Students will monitor their own progress by recording keyboard data to self assess.~~

~~Grades 7-8~~

~~6a) Students select appropriate platforms and tools to create, share and communicate their work effectively.~~

~~i) Students share information and ideas via presentations.~~

~~ii) Student presentations will include partial use of technology (e.g. Google Slides) and full use of technology (e.g. screencasts, video).~~

~~6b) Students create original works or responsibly repurpose other digital resources into new creative works.~~

i) Student work will clearly cite sources while employing technology to communicate student views and ideas.

ii) Students will select and modify graphic elements in support of student views and ideas.

iii) Students will create complex word processed documents, utilizing the full array of formatting and style options, while clearly conveying intended ideas.

6c) Students communicate complex ideas clearly using various digital tools to convey the concepts textually, visually, graphically, etc.

i) Students will demonstrate mastery in document and presentation creation while continuing to explore the impact of visual content.

ii) Students will explore new technology software in the creation and presentation of student initiated thoughts and ideas.

6d) Students publish or present content designed for specific audiences and select platforms that will effectively convey their ideas to those audiences.

i) Students choose and employ software and media best associated with their intended topic and audience.

ii) Students create persuasive presentations that express a clear point of view.

6e) Students with the support of educators will develop and enhance their keyboarding ability, known as touch typing. GLE's are 25 WPM for 7th grade and 30 WPM for 8th grade.

i) Students will practice keyboarding skills during most computer classes, with their progress monitored routinely by an educator.

ii) Educators will support individual student keyboard by differentiated instruction to accommodate students needs and abilities.

iii) Students will monitor their own progress by recording keyboard data to self assess

~~Standard 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.~~

~~**Grades K-1**~~ ~~7d) With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions.~~
~~**Grades 2-4**~~ ~~7a) Students will be introduced to digital tools that allow them to work with others.~~ ~~7b) Students will be introduced to using technology to communicate with others.~~

~~7c) With guidance from an educator, students take on different team roles and use age-appropriate technologies to complete projects (e.g. "Navigator and driver" when coding).~~

~~7d) With guidance from an educator, students use age-appropriate technologies to work together to understand problems and suggest solutions (e.g. group research projects).~~

~~Grades 5-6~~

~~7a) Students use digital tools to work with friends and people from different backgrounds or cultures.~~

~~i) With support from teachers, students use technology in a collaborative setting to research and report on content-related material.~~

~~ii) With support from teachers, students use internet resources to research cultural information from around the globe.~~

~~7b) Students use collaborative technologies to connect with others, including peers, experts and community members, to explore different points of view on various topics.~~

~~i) Students learn appropriate email etiquette and apply it to communicate effectively with peers and teachers.~~

~~ii) Students work collaboratively with other students in researching and presenting new information.~~

~~7c) Students perform a variety of roles within a team using age-appropriate technology to complete a project or solve a problem.~~

~~7d) Students work with others using collaborative technologies to explore local and global issues.~~

~~i) With support from teachers, students use online communication tools in support of collaborative efforts to exchange data and explore content concepts.~~

~~ii) With support from teachers, students transfer information electronically via shared documents and other collaborative technologies.~~

~~Grades 7-8~~

~~7a) Students use digital tools to interact with others to develop a richer understanding of different perspectives and cultures.~~

~~i) Students use technology in a collaborative setting to research and analyze a real-world or content-related problem.~~

~~ii) Students use internet resources to research cultural information from around the globe.~~

~~iii) Students participate in cooperative learning in an online learning community.~~

~~7b) Students use collaborative technologies to connect with others, including peers, experts and community members, to learn about issues and problems or to gain broader perspective.~~

~~7c) Students determine their role on a team to meet goals, based on their knowledge of technology and content, as well as personal preference.~~

~~7d) Students select collaborative technologies and use them to work with others to investigate and develop solutions related to local and global issues.~~

~~i) Students use online communication tools in support of collaborative efforts to exchange data and explore content concepts.~~

~~ii) Students transfer information electronically via shared documents and other collaborative technologies.~~

~~Year at a Glance~~

~~Trimester~~	~~Gr. K-1 Year at a Glance~~	~~Standards~~
~~1~~	~~**1. Basic Operations and Concepts**~~ ~~a. Turn a tablet off and on.~~ ~~b. Learn names and functions of parts (e.g. home button, power, volume, headphone jack, etc.).~~	~~1b~~ ~~2b~~

	c. Use screen icons to find, choose, and open programs. d. Use gestures to navigate device (e.g. swipe, tap, etc). **2. Device and Internet Safety** a. Use safe behaviors when using technology (e.g. use two hands to carry tablet, keep body calm, no food/drink nearby). b. On-line safety c. Don't share personal information on-line.	
2	**3. Using Digital Tools for Knowledge and Collaboration** a. eBasic searches for information using age-appropriate search engines (e.g. National Geographic Kids, kiddle.com) and appropriate language. b. Use refresh, forward, and back buttons to navigate a web browser. c. Identify and use hyperlinks within web pages or documents. d. Use software or online games for learning (e.g. Smartboard interactives, district endorsed apps/sites on tablets). e. Audience response tools (e.g. Plickers, writing on smartboard using Smart Ink). **4. Design Tools** a. Use of painting and or drawing programs. i) Introduce basic drawing tools including pencil, paint brush, shape, line, undo, redo, and eraser. ii) Use color palatte/wheel to change tool color. iii) Use text tool to add text to artwork. b. Introduction to use of multi-media and presentation tools. i) Use of camera on devices to take pictures and videos. ii) Use of photo/video editing tools to adjust images and add effects. iii) Making audio recordings. c. Introduction to designing within certain constraints (e.g. following directions). i) Through use of various manipulatives and technology (e.g. science manipulatives, center materials, Maker Space, Legos, Paint, beginning coding lessons).	3a 3d 4a 4b 4d 6b CCSS.ELA.LITERACY.RI.1.5. Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text. CCSS.ELA-LITERACY.SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood. NGSS K-2 ETS1-1.Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool. NGSS K-2 ETS1-2.Develop a simple sketch, drawing, or

	d. Encouraging and/or demonstrating perseverance when challenged (e.g. Make adjustments to design with Legos).	physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. NGSS.K-2.ETS1-3.Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
3	**5. Computational Thinking** a. Use technology tools to explore and find solutions (e.g. Virtual math manipulatives, daily weather tracking, Kodable). b. Represent/create whole class data sets (e.g. class survey data "favorite food"). c. Introduction to computer science and programming. i) Students use digital and nondigital tools to plan and manage a design process while creating algorithms. ii) Students use drag and drop programming to design. **6. Digital Communication** a. Use of respectful communication with appropriate language. b. Introduction to "publishing" using technology (e.g. Writing a response on the Smartboard using Smart Ink, creating an audio recording, using Paint to illustrate, or basic typing of a response using a word processing application). c. Learning that word processing documents can be saved. **7. Digital Collaboration** a. Students can work in groups to create a culminating project to show what they've learned (e.g. series of slides).	5a 5b 6c 7d CCSS.ELA.LITERACY.W.K.6.With guidance and support from adults, explore a variety of digital tools to produce and publish writing, including in collaboration with peers. CCSS.ELA-LITERACY.W.1.6&2.6.With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

Trimester	**Gr. 2-4 Year at a Glance**	**Standards**

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

1	**1. Basic Operations and Concepts** a. Turn a personal computer off and on. b. Learn names and functions of parts (e.g. power, mouse, volume, headphone jack, etc.). c. Use screen icons to find, choose, and open programs. d. Use mouse to navigate device (e.g. right-click, left-click, scroll bar). e. Introduce to shortcuts (Command-P, Command-V, Command-C, Command-X). f. Introduce to print dialog box to select local printers and adjust settings (e.g. number of copies, page range, color, orientation). g. Use log-in credentials to access the personal computer, network, etc. h. Name documents with appropriate file names and understand where files are stored/saved. i. Create, save, edit, and rename documents and organize into folders. **2. Device and Internet Safety** a. Use safe behaviors when using technology (e.g. use two hands to carry personal computers, keep body calm, no food/drink nearby). b. On-line safety i) Protect accounts by logging off of shared equipment. ii) Keep passwords confidential. c. Don't share personal information on-line. i) Understand that digital content is permanent and can't be deleted.	1a 1b 1c 1d 2a 2b 2c 2d
2	**3. Using Digital Tools for Knowledge and Collaboration** **a.** Basic searches for information using age-appropriate search engines (e.g. National Geographic Kids, kiddle.com) and appropriate language. b. Use refresh, forward, and back buttons to navigate a web browser. c. Identify and use hyperlinks within web pages or documents. d. Use software or online games for learning (e.g. Smartboard interactives, district endorsed sites on personal computers).	3a 3b 3c 3d 4a 4b 4c

	~~c. Audience response tools (e.g. Plickers, padlet, Kathoot).~~ ~~f. Use tabs to access multiple webpages.~~ ~~g. Create and utilize bookmarks to work more efficiently.~~ ~~**4. Design Tools**~~ ~~a. Use of multi-media and presentation tools.~~ ~~i) Use of camera on devices to take pictures and videos.~~ ~~ii) Use of photo/video editing tools to adjust images and add effects.~~ ~~iii) Making audio recordings.~~ ~~b. Copy/paste or insert graphics to enhance digital work (learning how to change size and position).~~ ~~c. Insert music/videos as appropriate.~~ ~~d. Use graphic organizers or digital timelines, as appropriate, to organize information.~~ ~~e. Introduction to designing within certain constraints (e.g. following directions).~~ ~~i) Through use of various manipulatives and technology (e.g. science manipulatives, coding).~~ ~~f. Encouraging and/or demonstrating perseverance when challenged (e.g. Make adjustments to commands when coding).~~	~~4d~~ ~~CCSS.ELA-LITERACY.RI.2.5 Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently.~~ ~~CCSS.ELA-LITERACY.RI.3.5. Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.~~ ~~CCSS.ELA-LITERACY.W.3.8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.~~ ~~CCSS.ELA-LITERACY.W.4.8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.~~ ~~CCSS.ELA-LITERACY.SL.2.5. Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.~~ ~~CCSS.ELA-LITERACY.SL.3.5. Create engaging audio recordings of stories or poems that~~

		~~demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.~~ ~~CCSS.ELA-LITERACY.SL.4.5. Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.~~ ~~NGSS 3-5 ETS1-1.Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.~~ ~~NGSS 3-5 ETS1-2.Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.~~ ~~NGSS 3-5 ETS1-3.Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or a prototype that can be improved.~~
~~3~~	~~**5. Computational Thinking**~~ ~~a. Use technology tools to explore and find solutions (e.g. Virtual math manipulatives, daily weather tracking, code.org).~~ ~~b. Represent/create whole class data sets (e.g. class survey data).~~ ~~c. Introduction to computer science and programming.~~ ~~i) Students use digital and nondigital tools to plan and manage a design process while creating algorithms.~~ ~~ii) Students use drag and drop programming to design.~~	~~5a~~ ~~5b~~ ~~5c~~ ~~5d~~ ~~6a~~ ~~6b~~ ~~6c~~ ~~6d~~

	~~**6. Digital Communication**~~ ~~a. Use of respectful communication with appropriate language.~~ ~~b. Introduction to basic keyboarding skills (e.g. students should have a general idea of where the keys are, encourage proper posture).~~ ~~c. Publishing using technology (e.g. Google Classroom, Padlet, word processing).~~ ~~d. Word processing~~ ~~i) Be able to write, edit, print, and save/name assignments.~~ ~~ii) Learn how to submit assignments digitally (e.g.Google Classroom, blendspace).~~ ~~iii) Highlight, copy, and paste text either within or between documents.~~ ~~iv) Proofread and edit documents using resources (e.g. toolbar, Spellcheck, spacing, etc.)~~ ~~e. Understanding of basics of email and messaging.~~ ~~**7. Digital Collaboration**~~ ~~a. Cite digital sources and paraphrase content.~~ ~~b. Students can work in groups to create a culminating project to show what they've learned (e.g. Google Docs, Google Slides, Powerpoint, Padlet).~~	~~7a~~ ~~7b~~ ~~7c~~ ~~7d~~ ~~CCSS.ELA-LITERACY.W.3.6.With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.~~ ~~CCSS.ELA-LITERACY.W.4.6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.~~ ~~CCSS.ELA-LITERACY.W.3.8. Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.~~ ~~CCSS.ELA-LITERACY.W.4.8. Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.~~

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

Quarter	Gr. 5 Computer Literacy Year at a Glance	Standards
1	**1. Keyboarding (6c)** a. Correct touch type keyboarding technique (6ci) b. Memorization of touch type finger placement (6ci) **2. Word Processing-1** a. Introduction to basic features (home ribbon) (1di3) b. File Organization (1dii3a) **3. Software Applications** a. Uploading and downloading assignments and projects (1dii3b) b. Copying and pasting content between applications (1dii3d) c. Adding bookmarks and favorites (1dii3e) d. using hyperlinks (1dii3f) **4. Email Etiquette (7bi)** a. Proper uses of e-mail (7bi) b. Proper way to e-mail teachers (7bi)	1c 1d 6c 7b

2	**1. Keyboarding (6e)** a. Correct touch type keyboarding technique (6ei) b. Emphasis on accuracy (6ei) **2. Word Processing-2** a. Inserting pictures from internet (6ai) (6bii) b. Picture Tool Ribbon (6ai) (6bii) c. Inserting tables (6ai) d. Spell check (6ai) **3. Computer Basics** a. Input/ Output (1di1) b. Hardware/ Software (1di2) **4. Presentation Software** a. Introduction to basic features (1di4) b. Linking to real-world topics (4aii)	1a 1b 1c 1d 4a 6a 6b 6c 6d 6e CCSS.ELA-LITERACY.SL.5.5. Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes.
3	**1. Keyboarding (6e)** a. Correct touch type keyboarding technique (6cii) b. Emphasis on speed and accuracy (6cii) c. Record scores in organized table to monitor progress (5ai) (6cii) 2. **Computer Science Unit-1** a. Students use digital and nondigital tools to plan and manage a design process while creating algorithms (4b) (4ci) (4di) (5ci) b. Students use drag and drop programming to design a game (4ci) (4di) (5cii) c. Completion of Code.org course 2 (4aiii) (4ci) (4di) d. Related computer science vocabulary (5di)	1c 4a 4b 4c 4d 5a 5c 5d 6c

4	**1. Keyboarding (6e)** a. Correct touch type keyboarding technique (6cii) b. Emphasis on speed and accuracy (6cii) **2. Basic Web Searches** a. Internet Safety (2ai) (2bi-v) (2c) (2d) b. Basic searches (3ai-iii) (7i) c. Web Evaluation (CRAAP - Current, Relevant, Authority, Accuracy and Purpose - unit co-taught with librarians) (3b1) **3. Spreadsheet Software:** a. Introduction to basic features (1di5) b. Record keyboard scores in organized table to monitor progress (5ai) (6cii)	1c 1d 2a 2b 2c 2d 3a 3b 5a 6e 7a CCSS.ELA-LITERACY.W.5.6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.
Quarter	**Gr. 6 Computer Literacy Year at a Glance**	**Standards**
1 or 3	**1. Keyboarding (6e)** a. Correct touch type keyboarding technique (6cii) b. Emphasis on speed and accuracy (6cii) **2. Intermediate Word Processing** a. Page setup including orientation and customizing margins b. Accessing and using add-on software (1dii3c) **3. Intermediate Presentation Software (6a)**	1c 1d 3a 3c 3d 6a 6b 6c 6d

	a. Application of effective presentation design including contrast, text size, and bulleting. (3diii) b. Application of intermediate features such as inserting videos, customized backgrounds, transitions, and animations. (3diii) c. Students research and present information on a chosen real-world related issue (3aiii) (3c) (3d) (7ai)	6c 7a 7b 7c 7d CCSS.ELA-LITERACY.SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information. CCSS.ELA-LITERACY.W.6.6. Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.
2 or 4	**1. Keyboarding (6c)** a. Correct touch type keyboarding technique (6cii) b. Emphasis on speed and accuracy (6cii) **2. Intermediate Spreadsheet Software** a. Students process data using spreadsheet software such as Google Sheets (5bii) b. Students will use tables, graphs, and images in support of ideas (6c) **3. Computer Science Unit-2** a. Introduction to Code.org course 3 (4aiii) (4ci) b. Reading through code to find and fix errors (4di) c. Related computer science vocabulary (5di)	4a 4b 4c 4d 5b 5d 6c 6c CCSS.ELA-LITERACY.W.6.2.A. Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and

		~~cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.~~ ~~NGSS.MS-ETS1-1.Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.~~ ~~NGSS.MS-ETS1-2.Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.~~ ~~NGSS.MS-ETS1-3.Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.~~ ~~NGSS.MS-ETS1-4.Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.~~
~~Quarter~~	**~~Gr. 7 Computer Literacy Year at a Glance~~**	**~~Standards~~**
~~1~~	**~~1. Keyboarding (6c)~~** ~~a. Correct touch type keyboarding technique (6cii)~~	~~1b~~ ~~1c~~

	~~b. Emphasis on speed and accuracy (6cii)~~ ~~**2. Advanced Word Processing-1 (6biii)**~~ ~~a. Customizing margins (6biii)~~ ~~b. Advanced help function (6biii)~~ ~~c. Accessing and using add-on software such as Thesaurus Pro (6biii)~~ ~~d. Students will create complex word processed documents, utilizing the full array of formatting and style options while clearly conveying intended ideas (6biii)~~ ~~e. Collaborative document creations (1b) (6ci)~~	~~6b~~ ~~6c~~ ~~6c~~
~~2~~	~~**1. Keyboarding (6c)**~~ ~~a. Correct touch type keyboarding technique (6cii)~~ ~~b. Emphasis on speed and accuracy (6cii)~~ ~~**2. Advanced Spreadsheet Software-1**~~ ~~a. Application of advanced skills such as customizing charts and borders, creating formulas, and analyzing charts to determine answers to questions regarding the data~~ ~~b. Learning advanced methods in recording and analyzing data through the exploration of real-world topics such as election results and payroll (5a1, 5a2)~~	~~1a~~ ~~1b~~ ~~1c~~ ~~5a~~ ~~6c~~ ~~CCSS.ELA-LITERACY.SL.7.2.Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.~~ ~~CCSS.MATH.CONTENT.7.SP.A.1.Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.~~

3	**1. Keyboarding (6e)** a. Correct touch type keyboarding technique (6cii) b. Emphasis on speed and accuracy (6cii) **2. Advanced Presentation Software-1 (6ci)** a. Students share information and ideas via presentations (6ai) (7ai) (6ei) b. Researching choice topics regarding internet safety and working collaboratively to create a presentation to share information and solutions with the class. (2bii) (2bv) (2diii) (3di) (7b) (7c) (7d) c. Students understand the importance of online identity and the permeance of their own digital footprint. (2ai) (2aii) **3. Computer Science Unit-3** a. Code.org CS Discoveries (4di) b. Related computer science vocabulary (5di) c. Students use text-based programming in order to solve a variety of problems while employing concepts involving algorithmic thinking. (4di) (5dii) d. Students develop a personalized final project that will engage students in design, testing, and iteration as they come to see that failure and debugging is an important part of the process (5cii) (4b) e. Students will be exposed to online simulations as examples of final project requirements (4bi)	1a 1c 1d 2a 2b 2c 2d 3d 4a 4b 4d 5c 5d 6a 6c 7a 7b 7c 7d CCSS.ELA-LITERACY.W.7.6. Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources. NGSS.MS-ETS1-1.Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution,

		~~taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.~~ ~~NGSS.MS-ETS1-2.Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.~~ ~~NGSS.MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.~~ ~~NGSS.MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.~~
~~4~~	~~**1. Keyboarding (6c)**~~ ~~a. Correct touch type keyboarding technique (6ci)~~ ~~b. Emphasis on speed and accuracy (6ci)~~ ~~**2. Advanced Web Searches-1**~~ ~~a. Conducting advanced searches using Boolean Terms (3aii) (7ai) (Destiny Quest-3cii)~~ ~~b. Students understand the consequences of plagiarism and how to appropriately create citations in order to give credit to original owner of ideas (2ci)~~	~~1c~~ ~~2c~~ ~~3a~~ ~~3b~~ ~~3c~~ ~~6c~~ ~~7a~~ ~~CCSS.ELA-LITERACY.W.7.1.B. Support claim(s) with logical~~

	c. Students create a variety of media products that include appropriate citation and attribution elements.(2cii) d. Students apply reliable resources to learning (3bi)	reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. CCSS.ELA-LITERACY.W.7.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
Quarter	**Gr. 8 Computer Literacy Year at a Glance**	**Standards**
1	**1. Keyboarding (6c)** a. Correct touch type keyboarding technique (6cii) b. Emphasis on speed and accuracy (6cii) c. Students will monitor their own progress by recording keyboard data to self assess (6ciii) **2. Advanced Word Processing-2 (6biii)** a. Using templates (6biii) b. Application of research to word processing documents (3div) c. Superscript, subscript, special characters (6biii) d. Working on projects collaboratively using networking software (1b)	1b 1c 1d 3d 6b 6c CCSS.ELA-LITERACY.W.8.2.A. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.

~~2~~	~~**1. Keyboarding (6e)**~~ ~~a. Correct touch type keyboarding technique (6cii)~~ ~~b. Emphasis on speed and accuracy (6cii)~~ ~~c. Students will monitor their own progress by recording keyboard data to self assess (6ciii)~~ ~~**2. Advanced Spreadsheet Software-2**~~ ~~a. Application of advanced skills on data sets such as customized sorting, creating advanced formulas, and analyzing data to draw inferences~~ ~~b. Learning advanced methods in recording and analyzing data through the exploration of choice real-world topics involving statistics (3di) (5ai, 5aii)~~ ~~c. Drawing inferences and conclusions (5bii)~~ ~~d. Comparing and contrasting Google Sheets to Microsoft Excel (6di)~~	~~1d~~ ~~3d~~ ~~5a~~ ~~5b~~ ~~6d~~ ~~6e~~
~~3~~	~~**1. Keyboarding (6e)**~~ ~~a. Correct touch type keyboarding technique (6cii)~~ ~~b. Emphasis on speed and accuracy(6cii)~~ ~~c. Students will monitor their own progress by recording keyboard data to self assess (6ciii)~~ ~~**2. Computer Science Unit-4**~~ ~~a. Code.org CS Discoveries Unit (4di)~~ ~~b. Students use text-based programming in order to solve a variety of problems while employing concepts involving algorithmic thinking. (4di) (5dii)~~ ~~c. Related computer science vocabulary (5di)~~ ~~d. Students will use the design process to write code in producing a functional application in computer class. (4ai) (4b) (4ci)~~ ~~e. Students will be exposed to online simulations as examples of final project requirements (4bi)~~	~~1a~~ ~~1d~~ ~~4b~~ ~~4c~~ ~~4d~~ ~~5d~~ ~~6e~~ ~~NGSS.MS-ETS1-1.Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.~~ ~~NGSS.MS-ETS1-2.Evaluate competing design solutions using a systematic process to determine how well they meet the criteria~~

		~~and constraints of the problem.~~ ~~NGSS.MS-ETS1-3.Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.~~ ~~NGSS.MS-ETS1-4.Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.~~
~~4~~	~~**1. Keyboarding (6e)**~~ ~~a. Correct touch type keyboarding technique (6eii)~~ ~~b. Emphasis on speed and accuracy (6eii)~~ ~~c. Students will monitor their own progress by recording keyboard data to self assess (6eiii)~~ ~~**2. Advanced Web Searches-2**~~ ~~a. Information Technology Evaluation (Fake News Unit co-taught with librarians) (3b)~~ ~~b. Advanced Database Search (Unit co-taught with librarians) (3ai-iii) (7ai)~~ ~~**3. Advanced Presentation Software-2**~~ ~~a. Researching choice topics based on real-world issues that hold personal importance to students, working collaboratively, and presenting information through choice presentation software applications such as prezi and screencastify (3di) (6ai) (6aii) (6ci) (6cii) (6dii) (7a) (7b) (7c) (7d)~~	~~1d~~ ~~3a~~ ~~3b~~ ~~3d~~ ~~6a~~ ~~6c~~ ~~6d~~ ~~6e~~ ~~7a~~ ~~7b~~ ~~7c~~ ~~7d~~ ~~CCSS.ELA-LITERACY.W.8.6. Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with~~

		~~others.~~ ~~CCSS.ELA-LITERACY.W.8.8. Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.~~

Chariho Regional School District
Technology Education Curriculum
Grades K - 8

References

"Code.org." *Code.org*. N.p., n.d. Web. 28 Feb. 2017. https://code.org/

RI CS Education Standards. CS4RI. (n.d.). Retrieved April 14, 2022, from https://www.cs4ri.org/standards

“Common Core State Standards for ELA/Literacy.” Rhode Island Department of Education. Rhode Island Department of Elementary and Secondary Education. 2011. Web. 1 May 2017. http://www.ride.ri.gov/InstructionAssessment/Literacy/CommonCoreStateStandardsforELALiteracy.aspx.

“Common Core State Standards for Mathematics.” Rhode Island Department of Education. Rhode Island Department of Elementary and Secondary Education. 2011. Web. 1 Mar. 2017. http://www.ride.ri.gov/InstructionAssessment/Mathematics/CommonCoreStateStandardsforMathematics.aspx.

“ISTE Standards for Students.” ISTE Standards. International Society for Technology in Education, 2016. Web. 1 Mar. 2017. http://www.iste.org/standards/iste-standards/standards-for-students

"Standards for Teachers." *For Teachers*. ISTE, n.d. Web. 01 Mar. 2017. http://www.iste.org/standards/standards/standards-for-teachers

"Next Generation Science Standards." RIDE Rhode Island Department of Education. Rhode Island Department of Elementary and Secondary Education, 2016. Web. 1 Mar. 2017. http://www.ride.ri.gov/InstructionAssessment/Science/NextGenerationScienceStandards.aspx