

Kindergarten Technology Standards



Tennessee Dept. of Ed. Digital Readiness Standards

- **Tennessee DOE Digital Readiness Standards Skill Levels:**

Introduced (I): students in this range are building foundational skills and first-time exposure to the standard

Reinforced (R): students in this range are receiving scaffolded supports to review introduced standards and develop a deeper understanding that will lead to proficiency.

Mastered (M): students in this range have thoroughly reviewed and practiced the standard and can apply it independently to complete mastery.

- **Digital Readiness Strands:** excerpted from [TN K-8 Digital Readiness Standards](#)

- ***Foundational Concepts and Operations*** - Demonstrate proficiency in the use of computers and applications as well as an understanding of the concepts underlying hardware, software, and connectivity.
- ***Analytical and Innovative Thinking*** - Use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
- ***Information Storage and Access*** - Apply digital tools to store, access, and use information in a variety of capacities to enhance learning.
- ***Communication and Collaboration*** – Use digital media and environments to communicate and work collaboratively to support individual learning and contribute to the learning of others.
- ***Digital Citizenship*** - Demonstrate the appropriate use of technology and an understanding of ethical behavior and safety issues in an interconnected digital society.
- ***Coding and Computer Programming*** – Use analytical and innovative problem-solving skills to decompose, identify patterns, generalize information, and formulate algorithmic processes to solve a problem or related set of problems with a variety of tools.

Strand: Foundational Concepts and Operations (FCO)		
Standards	Skill Level	TN Academic Standards Connections
FCO.1 Demonstrate fundamental technology skills (e.g., turn on and login to device).	I	<ul style="list-style-type: none"> Mathematics: MP1, MP5 Science Crosscutting Concepts: Pattern; Cause and effect
FCO.2 Interact with a device using a pointing tool such as a mouse, tactile sensor, or other input. <i>-Differentiate using click, point, scroll, & select</i>	I	<ul style="list-style-type: none"> Mathematics: MP1, MP5 Science Crosscutting Concept: Structure and function
FCO.3 Navigate to applications and documents by using desktop icons, windows, and menus. <i>-Model exiting applications and documents</i> <i>-Model on multiple devices - Ex: tablets, desktop, laptop</i>	I	<ul style="list-style-type: none"> Mathematics: MP1, MP5 Science & Engineering Practice: Using mathematics and computational thinking
FCO.4 Use age-appropriate online tools and resources (e.g., tutorial, assessment, web browser).	I	<ul style="list-style-type: none"> Mathematics: MP1, MP5 Science & Engineering Practice: Obtaining, evaluating and communicating information
FCO.5 Demonstrate fundamental keyboarding skills. <ul style="list-style-type: none"> <i>Use appropriate hand pressure on mouse and keyboard</i> <i>Operate special purpose keys (return/enter, spacebar, arrows, delete key)</i> 	I	<ul style="list-style-type: none"> ELA: FL.PC.1 Mathematics: MP1, MP5
FCO.6 Select and use appropriate word processing, spreadsheets, and multimedia applications.	I	<ul style="list-style-type: none"> Mathematics: MP1, MP4, MP5, MP8 Science & Engineering Practice: Using mathematics and computational thinking

FCO.7 Use menu, tool bar, and editing functions (e.g., font/size/style/line spacing, margins, spell check) to format, edit, save, and print a document.	I	<ul style="list-style-type: none"> • ELA: FL.WC.4 • Mathematics: MP5, MP6
FCO.8 Identify and solve routine hardware and software problems that occur during routine usage. <i>-Examples: printer not printing, battery not charged, screen freezes, computer/Internet is slow, keyboard/mouse not working, sound</i> <i>-Provide opportunities to discuss proper care of devices.</i> <i>-Articulate how to solve these problems in addition to the troubleshooting aspects.</i>	I	<ul style="list-style-type: none"> • Mathematics: MP1, MP4 • Science & Engineering Practices: Planning and carrying out controlled investigations; Constructing explanations and designing solutions • Science Crosscutting Concepts: Pattern; Cause and effect

Foundational Concepts and Operations (FCO) Resources

Resources	Vocabulary
www.abcmouse.com www.abcya.com www.brainpopjr.com (if school has a subscription) www.starfall.com www.tickettoread.com (if school has a subscription) http://www.toytheater.com https://login.i-ready.com/ (if school has a subscription) Have students point out icons and explain to a partner what they do. Students can use drawing software such as Paintbrush or ABCYa Paint to draw a picture and add text.	Special keys Click/Double Click Cursor Device Drag Dock Edit Enter/return Hardware Icon Internet Keyboard Menu Monitor Mouse Print

<p>Discuss how commonly used programs differ in what they can do and how to use them.</p> <p>Practice using a mouse and touchpad to navigate to different parts of a webpage or program.</p> <p>Understand how to login/logoff of a device using their own username and password. Utilize cards with logins to assist in learning usernames.</p> <p>Parts of Computer</p> <p>Mouse Practice Game</p>	<p>Scroll</p> <p>Software</p> <p>Spacebar</p> <p>Touchpad</p>
--	---

Strand: Communication and Collaboration (CC)		
Standards	Skill Level	TN Academic Standards Connections
CC.1 Interact with peers, experts, and others using a variety of digital tools and devices.	I	<ul style="list-style-type: none"> • ELA: W.PDW.6 • Mathematics: MP3, MP6, Literacy Skills for Mathematical Proficiency • Science & Engineering Practices: Obtaining, evaluating and communicating information; Engaging in argument from evidence; Constructing explanations and designing solutions • Social Studies: SSP.01
CC.2 Communicate information and ideas effectively to multiple audiences using a variety of media and formats. (e.g., reports, research papers, presentations, newsletters, Web sites, podcasts, blogs), citing sources.	I	<ul style="list-style-type: none"> • ELA: SL.PKI.4, SL.PKI.5, R.RI.IKI.7 • Mathematics: MP3, MP6, Literacy Skills for Mathematical Proficiency • Science & Engineering Practice: Obtaining, evaluating and communicating information • Social Studies: SSP.01, SSP.04
CC.3 Contribute, individually or as part of a team, to work to identify and solve authentic problems or produce original works using a variety of digital tools and devices.	I	<ul style="list-style-type: none"> • ELA: SL.CC.1 • Mathematics: MP2, MP3, MP4, MP5, MP6, MP7, Literacy Skills for Mathematical Proficiency • Science & Engineering Practices: Asking questions and defining problems; Developing and using models; Analyzing and interpreting data; Using mathematics and computational thinking; Constructing explanations and designing solutions
Communication and Collaboration (CC) Resources		
Resources	Vocabulary	
What types of technology allow us to communicate? (Cell phone, telephone, radio, TV, Skype, FaceTime etc.)	Communicate Problem-solve Podcast Blog	

Students can practice communication etiquette on whisper phones and online with supervision. Common Sense Media Communication	Audience Website Presentation Experts
---	--

Strand: Analytical and Innovative Thinking (AIT)		
Standards	Skill Level	TN Academic Standards Connections
AIT.1 Identify and define problems and form significant questions for investigation.	I	<ul style="list-style-type: none"> • ELA: RL.KID.1 • Mathematics: MP1, MP2, MP4, MP7, MP8 • Science & Engineering Practice: Asking questions and defining problems • Social Studies: SSP.03
AIT.2 Develop a plan to use technology to find a solution and create projects.	I	<ul style="list-style-type: none"> • ELA: SL.CC.2, W.PDW.6 • Mathematics: MP1, MP2, MP8 • Science & Engineering Practice: Planning and carrying out controlled investigations, constructing explanations and designing solutions
AIT.3 Determine the best technology and appropriate tool to address a variety of tasks and problems.	I	<ul style="list-style-type: none"> • ELA: SL.CC.2, W.PDW.6 • Mathematics: MP5, MP6 • Science & Engineering Practice: Using mathematics and computational thinking
AIT.4 Use multiple processes and diverse perspectives to explore alternative solutions. <i>-Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</i>	I	<ul style="list-style-type: none"> • ELA: SL.CC.2, SL.CC.3, R.RI.CS.6 • Mathematics: MP1,MP4,MP8 • Science & Engineering Practices: Using mathematics and computational thinking; Engaging in argument from evidence; Obtaining, evaluating, and communicating information • Social Studies: SSP.1, SSP.02, SSP.04

AIT.5 Evaluate the accuracy, relevance, appropriateness, and bias of electronic information sources.	I	<ul style="list-style-type: none"> • ELA: SL.CC.2, W.TTP.1, W.TTP.2, W.PDW.6, R.RI.IKI.8 • Mathematics: MP1, MP8 • Science & Engineering Practices: Engaging in argument from evidence; Obtaining, evaluating, and communicating information • Social Studies: SSP.02, SSP.03
AIT.6 Collect, organize, analyze, and interpret data to identify solutions and/or make informed decisions.	I	<ul style="list-style-type: none"> • ELA: SL.CC.2, W.TTP.1, W.TTP.2, W.PDW.6 • Mathematics: MP6, MP7, MP8 • Science & Engineering Practices: Analyzing and interpreting data; constructing explanations and designing solutions • Social Studies: SSP.1, SSP.02, SSP.03, SSP.04
AIT.7 Infer and predict or propose relationships with data.	I	<ul style="list-style-type: none"> • ELA: SL.CC.2, R.RI.IKI.8 • Mathematics: MP1, MP6 • Science & Engineering Practices: Analyzing and interpreting data; Constructing explanations and designing solutions; Engaging in argument from evidence
AIT.8 Identify that various algorithms can achieve the same result and determine the most efficient sequence.	I	<ul style="list-style-type: none"> • Mathematics: MP1, MP2, MP4, MP7, MP8 • Science & Engineering Practice: Using mathematics and computational thinking

Analytical and Innovative Thinking (AIT) Resources

Resources	Vocabulary
<p>Discuss problem-solving strategies with students.</p> <p>Define the problem, choose and order steps in solving the problem, and try the solution.</p> <p>Problem-solving games...</p> <p>abcYa Tangrams</p>	<p>Troubleshooting</p> <p>Homepage</p> <p>Navigate</p> <p>Problem solve</p> <p>Search Engine</p> <p>Solution</p> <p>Accurate</p> <p>Data</p> <p>Algorithm</p>

Eduplace's Robopacker https://code.org/curriculum/unplugged Design Process BrainPopJr.	Sequence
--	----------

Strand: Digital Citizenship (DC)		
Standards	Skill Level	TN Academic Standards Connections
DC.1 Advocate, demonstrate and routinely practice safe, legal, and responsible use of information and technology. <ul style="list-style-type: none"> <i>Model responsible use of hardware and software.</i> 	I	<ul style="list-style-type: none"> ELA: W.TTP.1 Mathematics: MP5 Science & Engineering Practice: Obtaining, evaluating, and communicating information
DC.2 Exhibit a positive mindset toward using technology that supports collaboration, learning, and productivity.	I	<ul style="list-style-type: none"> ELA: SL.CC.1, W.PDW.6 Science & Engineering Practices: Engaging in argument from evidence; Obtaining, evaluating, and communicating information
DC.3 Exhibit leadership for digital citizenship.	I	
DC.4 Recognize and describe the potential risks and dangers associated with various forms of online communications (e.g., cell phones, social media, digital photos). <i>Students will...</i> <ul style="list-style-type: none"> <i>Notify the teacher immediately if inappropriate content appears on their device.</i> <i>Recognize the importance of supervised use of technology.</i> 	I	<ul style="list-style-type: none"> ELA: R.KID.2, R.KID.3, R.RI.IKI.8, W.TTP.2 Mathematics: MP2 Science & Engineering Practices: Engaging in argument from evidence; Obtaining, evaluating, and communicating information
DC.5 Explain responsible uses of technology and digital information; describe possible consequences of inappropriate use such as copyright infringement and piracy.	I	<ul style="list-style-type: none"> ELA: R.KID.2, R.KID.3, R.RI.IKI.8, W.TTP.2, W.PDW.6 Mathematics: MP3 Science & Engineering Practice: Obtaining, evaluating, and communicating information
Digital Citizenship (DC) Resources		

Resources	Vocabulary
KCS Digital Citizenship Resources Brain Pop Jr.'s Internet Safety NetSmartz Kids CommonSenseMedia.org -My Online Neighborhood ABCYa 's Cyber 5 NearPod-search common sense media lessons	Block Computer virus Copyright Laws Cyberbully Digital citizenship Digital etiquette (netiquette) Download Internet Internet Safety Login/Logout Pop-up window Privacy Responsible use Social media Website

Strand: Information Storage and Access (ISA)		
Standards	Skill Level	TN Academic Standards Connections
ISA.1 Enter, organize, and synthesize information in a variety of platforms. (e.g., saving, organizing, and storing word documents and spreadsheets)	I	<ul style="list-style-type: none"> • ELA: R.CS.5, R.IKI.9 • Mathematics: MP5, 1.MD.C.5 • Science & Engineering Practices: Developing and using models; Analyzing and interpreting data; Constructing explanations and designing solutions; Obtaining, evaluating, and communicating information • Social Studies: SSP.3
ISA.2 Identify and use a variety of storage media and demonstrate an understanding of the rationale for using a certain medium for a specific purpose.	I	<ul style="list-style-type: none"> • ELA: R.CS.6 • Mathematics: MP5 • Science & Engineering Practice: Using mathematics and computational thinking
ISA.3 Plan and use strategies to access information and guide inquiry.	I	<ul style="list-style-type: none"> • ELA: RL.KID.1 • Mathematics: MP1 • Science & Engineering Practice: Obtaining, evaluating, and communicating information
ISA.4 Locate information from a variety of sources.	I	<ul style="list-style-type: none"> • ELA: R.KID.1, R.IKI.7 • Mathematics: MP5 • Science & Engineering Practice: Obtaining, evaluating, and communicating information • Social Studies: SSP.1
ISA.5 Perform basic searches on databases to locate information.	I	<ul style="list-style-type: none"> • ELA: R.KID.2, R.KID.3 • Mathematics: MP1 • Science & Engineering Practice: Obtaining, evaluating, and communicating information

ISA.6 Select appropriate information sources and digital tools.	I	<ul style="list-style-type: none"> • ELA: R.RI.IK1.8 • Mathematics: MP5 • Science & Engineering Practices: Engaging in Argument from evidence; Obtaining, evaluating, and communicating information
ISA.7 Use age-appropriate technologies to locate, collect, organize content from media collection(s) for specific purposes, such as citing sources.	I	<ul style="list-style-type: none"> • ELA: R.CS.5, R.RI.IK1.8 • Mathematics: MP5 • Science & Engineering Practice: Obtaining, evaluating, and communicating information • Social Studies: SSP.1, SSP.03
ISA.8 Describe the rationale for various security measures when using technology.	I	<ul style="list-style-type: none"> • ELA: R.KID.2, R.RI.IK1.8, W.TTP.2 • Mathematics: MP3
Information Storage and Access (ISA) Resources		
Resources	Vocabulary	
Library Research Resources Common Sense Media Search Tools	Database Search Security Citing Saving Storage source	

Strand: Coding and Computer Programming (CCP) – Grade K	
Standards	
<p>K.CCP.1 Identify, using appropriate terminology, common physical components of computing systems (hardware). For example, but not limited to, desktop computers, laptop computers, tablet devices, monitors, keyboards, mice and printers.</p> <p>K.CCP.2 Use simple trial and error strategies to identify when a computing device is not working as intended. For example, but not limited to, if the device does not turn on students can identify if it needs to be charged or is unplugged before saying the device does not work.</p> <p>K.CCP.3 Define an algorithm as a list of steps that can be followed to finish a task or solve a problem.</p> <p>K.CCP.4 Decompose an example problem into smaller sub-problems with teacher guidance or independently.</p> <p>K.CCP.5 Collaboratively, students can build independence and sophistication using a simple design process (e.g., Ask, Plan, Do, Reflect) to illustrate a program's sequence and outcomes.</p>	
Coding and Computer Programming (CCP) – Grade K Resources	
Resources	Vocabulary
https://code.org/ https://scratch.mit.edu/ https://www.tynker.com/ https://edu.sphero.com/ https://www.makewonder.com/ https://edu.bloxelsbuilder.com/ https://www.modrobotics.com/	Coding Computer science Algorithm Series Decompose

App - Think and Learn Codeapillar	
-----------------------------------	--