

Branchburg Township Public Schools

Office of Curriculum and Instruction

Kindergarten Technology Curriculum



Adopted by the Board of Education October 2022

This curriculum is aligned with the 2020 New Jersey Student Learning Standards – Computer Science and Design Thinking

Curriculum Scope and Sequence

Content Area	Technology	Course Title/Grade Level:	Kindergarten
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	Topic/Unit Name	Suggested Pacing (Days/Weeks)
<u>Topic/Unit #1</u>	Digital Citizenship & Routines	4 Weeks
<u>Topic/Unit #2</u>	Parts of a Computer	2 Weeks
<u>Topic/Unit #3</u>	Using Trackpads & Touchscreen to Navigate a Website	6 Weeks
<u>Topic/Unit #4</u>	Introduction to Coding (Sequence)	12 Weeks
<u>Topic/Unit #5</u>	Intro to Typing (Finger placement)	6 Weeks

Topic/Unit 1 Title	Digital Citizenship & Routines	Approximate Pacing	4 Weeks
STANDARDS			
NJSLS Technology			
<p>8.1.2.IC.1: Compare how individuals live and work before and after the implementation of new computing technology.</p> <p>8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.</p> <p>8.1.2.NI.2: Describe how the Internet enables individuals to connect with others worldwide.</p> <p>8.1.2.NI.4: Explain why access to devices need to be secured.</p> <p>8.2.2.EC.1: Identify and compare technology used in different schools, communities, regions, and parts of the world.</p>			
Interdisciplinary Connections:		21st Century Skills:	
<p>CCSS.ELA-LITERACY.RI.K.1 : With prompting and support, ask and answer questions about key details in a text.</p> <p>Example : After reading a story about an event that occurred online, students will be asked to recall what happened and why.</p>		<p>9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community</p> <p>Example: Students will be asked how they could react to something inappropriate they may have come across while using technology.</p>	
Technology Standards:		Career Ready Practices:	
See Above (This is a Technology Course)		<p>9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them.</p> <p>Example: Discuss with students the best way to keep their devices and electronics safe.</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS			
<ol style="list-style-type: none"> 1. The decisions I make online can greatly impact how other people feel and look at me. 2. The importance of keeping personal information private. 3. What does being a good digital citizen look like? 4. The importance of keeping technology and your workspace clear of hazards. 5. Better understand the significance of technology in everyday life. 			
STUDENT LEARNING OBJECTIVES			

Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know: Online Safety, Passwords, Privacy, digital citizen,</p>	<p>Students will be able to: Tell the difference between appropriate online behavior and inappropriate behavior. Be able to balance online and offline activities.</p>

ASSESSMENT OF LEARNING

<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Students will answer questions on Digital Citizenship Topics</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Teacher Observations and Notes</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Student Research, Handouts, Group Activities</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>Students can demonstrate their understanding of safe practices by appropriate implementation and answering questions related to the topic at the beginning of the unit and the culmination of the unit. An assessment will be administered later in the year as well.</p>

RESOURCES

<p>Core instructional materials: https://www.commonsense.org/education/scope-and-sequence</p>
<p>Supplemental materials:</p>

<https://www.edutopia.org/topic/digital-citizenship>

Instructional tutorials, visuals, simulations and handouts

Modifications for Learners

See [appendix](#)

Topic/Unit 2 Title	Parts of a Computer	Approximate Pacing	2 Weeks
STANDARDS			
NJSLS Technology			
<p>8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.</p> <p>8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.</p> <p>8.1.2.CS.3: Describe basic hardware and software problems using accurate terminology.</p> <ul style="list-style-type: none"> • 8.2.2.ITH.1: Identify products that are designed to meet human wants or needs. • 8.2.2.ITH.2: Explain the purpose of a product and its value. • 8.2.2.ITH.3: Identify how technology impacts or improves life. • 8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks. • 8.2.2.ED.1: Communicate the function of a product or device. 			
Interdisciplinary Connections:		21st Century Skills:	
<p>CCSS.ELA-LITERACY.RL.K.2 : With prompting and support, retell familiar stories, including key details.</p> <p>Example : Students will recall parts of a computer and answer when prompted. They will also be able to recall instances in which they used specific devices.</p>		<p>9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them.</p> <p>Example : In understanding the parts of a computer, discussion on how expensive specific parts of the computer are.</p>	
Technology Standards:		Career Ready Practices:	
See Above (This is a Technology Course)		<p>9.1.2. FI.1: Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards).</p> <p>Example: In discussing different parts of a computer and technologies, discussing the emergence of NFC (Near-Field-Communications)</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS			
<ol style="list-style-type: none"> 1. What are the different parts of a computer, chromebook, and other technologies. 2. What is the importance of technology in the world. 3. How do you use technology appropriately. 			

STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know: Computer, Laptop, Chromebook, Smartphone, Computer safety, Keyboard, Mouse, Touchpad, Internet, Websites</p>	<p>Students will be able to: Tell the different parts of a computer, chromebook and smartphone. Different tasks that technology can accomplish.</p>
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Portfolio Rubrics Notes</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Anecdotal Records Teacher Observation</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Group wide activities or alternative programs Handouts</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>Students can demonstrate their understanding of different parts of a computer and other devices and answer questions related to the topic at the beginning of the unit and the culmination of the unit. An assessment will be administered later in the year as well.</p>
RESOURCES	
<p>Core instructional materials: www.abcya.com www.brainpop.com Chromebooks</p>	
<p>Supplemental materials: Instructional tutorials, visuals, simulations and handouts</p>	

Modifications for Learners

See [appendix](#)

Topic/Unit 3 Title	Using Trackpads & Touchscreen to Navigate a Website	Approximate Pacing	6 Weeks
STANDARDS			
NJSLS Technology			
<p>8.1.2.DA.2: Store, copy, search, retrieve, modify, and delete data using a computing device.</p> <p>8.1.2.AP.2: Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>8.1.2.AP.5: Describe a program’s sequence of events, goals, and expected outcomes.</p> <p>8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.</p> <p>8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.</p> <p>8.1.2.CS.3: Describe basic hardware and software problems using accurate terminology.</p>			
Interdisciplinary Connections:		21st Century Skills:	
<p>CCSS.ELA-LITERACY.RF.K.3.C : Read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).</p> <p>Example : When students are working on keyboarding practice, they will be able to read sight words such as dog and cat when they are prompted to type it.</p>		<p>9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.</p> <p>Example : Students will navigate websites when learning how to explore websites and complete given tasks for the specific activity.</p>	
Technology Standards:		Career Ready Practices:	
See Above (This is a Technology Course)		<p>9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).</p> <p>Example : Students will navigate a paint application or program and create a story of their own. Students will be able to add a sentence describing the scene if capable.</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS			
<ol style="list-style-type: none"> 1. How can you navigate on a website (touchscreen and trackpad) 2. How can you use Google Classroom to get to websites? 3. What is an address? 4. What are links? 			
STUDENT LEARNING OBJECTIVES			
Key Knowledge		Process/Skills/Procedures/Application of Key Knowledge	

<p>Students will know: How to navigate to particular websites. How to go back and forth on websites How to log onto a device in order to access course work.</p>	<p>Students will be able to: Use Google classroom to go between websites. Refresh a web page and troubleshoot if problems arise.</p>
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ASSESSMENT OF LEARNING

<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Portfolio Rubrics Notes</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Anecdotal Records Teacher Observation</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Group wide activities or alternative programs Handouts</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>Students will be asked to access websites at the beginning of the course and the instructor will monitor how/ if students are able to access work. The instructor will revisit the same website later in the year to see if the students are able to navigate the website(s) better and more independently.</p>

RESOURCES

Core instructional materials:
www.abcya.com
www.brainpop.com
classroom.google.com
Chromebooks (appropriate device)

Supplemental materials:
Instructional tutorials, visuals, simulations and handouts

Modifications for Learners

See [appendix](#)

Topic/Unit 4 Title	Introduction to Coding (Sequence)	Approximate Pacing	12 Weeks
STANDARDS			
NJSLS Technology			
<p>8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.</p> <p>8.1.2.AP.2: Model the way programs store and manipulate data by using numbers or other symbols to represent information.</p> <p>8.1.2.AP.3: Create programs with sequences and simple loops to accomplish tasks.</p> <p>8.1.2.AP.4: Break down a task into a sequence of steps.</p> <p>8.1.2.AP.5: Describe a program’s sequence of events, goals, and expected outcomes.</p> <p>8.1.2.AP.6: Debug errors in an algorithm or program that includes sequences and simple loops.</p>			
Interdisciplinary Connections:		21st Century Skills:	
<p>CCSS.MATH.CONTENT.K.CC.A.2 : Count forward beginning from a given number within the known sequence (instead of having to begin at 1).</p> <p>Example : Students will be counting how many spaces the Fuzzball will need to go forward in order to arrive to the goal.</p>		<p>9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.</p> <p>Example : Students will explore various jobs that would require coding and/or logic in order to better understand the importance and relationship between Coding and the real world.</p>	
Technology Standards:		Career Ready Practices:	
See Above (This is a Technology Course)		<p>9.1.2.PB.2: Explain why an individual would choose to save money</p> <p>Example: Students will be given the opportunity to purchase upgrades and items for the characters in the Coding application, and will be urged to consider saving the coins in order to save up for larger purchases.</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS			
<ol style="list-style-type: none"> 1. What is Coding? 2. What is Sequencing? 3. Why is it important to help these characters get through the maze? 			

STUDENT LEARNING OBJECTIVES	
Key Knowledge	Process/Skills/Procedures/Application of Key Knowledge
<p>Students will know: Develop understanding of coding and sequencing and understand logic involved in programming in various programs and applications</p>	<p>Students will be able to: Work on Kodable lessons through Sequencing as well as Create-A-Fuzz.</p>
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Portfolio Rubrics Notes</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Anecdotal Records Teacher Observation</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Group wide activities or alternative programs Paper Coding</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>Students will be assessed at the beginning of the section on familiarity with programs, and will be able to progress further based on progress.</p>
RESOURCES	
<p>Core instructional materials: www.kodable.com www.abcya.com http://pbskids.org/</p>	

<https://csedweek.org/unplugged/thinkersmith>

Supplemental materials:

Code.org, Instructional tutorials, visuals, simulations and handouts

Modifications for Learners

See [appendix](#)

Topic/Unit 5 Title	Intro to Typing (Finger placement)	Approximate Pacing	6 Weeks
STANDARDS			
NJSLS Technology			
<p>8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.</p> <p>8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.</p> <p>8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.</p>			
Interdisciplinary Connections:		21st Century Skills:	
<p>CCSS.ELA-LITERACY.SL.K.3 : Ask and answer questions in order to seek help, get information, or clarify something that is not understood.</p> <p>Example: During classroom procedures and throughout the year(including keyboarding practice), students will be encouraged to ask questions and receive assistance on topics that they may need assistance with.</p>		<p>9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.</p> <p>Example : Students will explore various jobs that would require keyboarding in order to better understand the importance and relationship between keyboarding and the real world.</p>	
Technology Standards:		Career Ready Practices:	
See Above (This is a Technology Course)		<p>9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).</p> <p>Example: Students will navigate various keyboarding practice programs in order to practice keyboarding and to understand the importance of appropriate keyboarding technique.</p>	
UNIT/TOPIC ESSENTIAL QUESTIONS AND ENDURING OBJECTIVES/UNDERSTANDINGS			
<ol style="list-style-type: none"> 1. Why is it important to develop proper keyboarding techniques early on? 2. Home Row finger placement 3. What can keyboarding be used for beyond keyboard practice. 			
STUDENT LEARNING OBJECTIVES			
Key Knowledge		Process/Skills/Procedures/Application of Key Knowledge	

<p>Students will know: QWERTY, Home Row, Hand placement on a keyboard, Backspace, Space Bar</p>	<p>Students will be able to: Keyboard to the best of their ability by the end of the unit.</p>
ASSESSMENT OF LEARNING	
<p>Summative Assessment (Assessment at the end of the learning period)</p>	<p>Portfolio Rubrics Notes</p>
<p>Formative Assessments (Ongoing assessments during the learning period to inform instruction)</p>	<p>Anecdotal Records Teacher Observation</p>
<p>Alternative Assessments (Any learning activity or assessment that asks students to <i>perform</i> to demonstrate their knowledge, understanding and proficiency)</p>	<p>Group wide activities or alternative programs Handouts</p>
<p>Benchmark Assessments (used to establish baseline achievement data and measure progress towards grade level standards; given 2-3 X per year)</p>	<p>Students will take a timed typing test early in the year to see where they are in WPM and Accuracy, and will take a follow up at the end of the unit to measure progress.</p>
RESOURCES	
<p>Core instructional materials: www.abcya.com https://www.typing.com/student/game/keyboard-climber-2 https://www.turtlediary.com/games/typing-games.html</p>	
<p>Supplemental materials: Instructional tutorials, visuals, simulations and handouts</p>	
Modifications for Learners	
<p>See appendix</p>	