

North Dakota CS Standards Alignment with CodeX Curriculum

	Unit 1	Unit 2	Unit 3
Technology Systems			
5.NI.1 Understand that information is sent and received across physical or wireless paths.			
5.HS.1 Compare and contrast physical and virtual systems.			
5.HS.2 Independently use a computing device to perform a variety of tasks.	[1]		
5.HS.3 Recognize users have different technology needs and preferences.			
5.T.1 With guidance, apply basic troubleshooting strategies.	[2]		
Computational Thinking			
5.PSA.1 Create a sequence of instructions from a previous decomposed task.			
5.PSA.2 Debug a program that includes sequencing, loops, or conditionals.	[3]		
5.PSA.3 Work collaboratively to explore multiple solutions to a task.			
5.DCA.1 Organize and present collected data to highlight comparisons and support a claim.			
5.DD.1 Independently or collaboratively create programs that use sequencing and looping.	[4]		
5.DD.2 Create solutions to problems using a design method.			
Information Literacy			
5.A.1 Refine your keyword search to improve your results.			
5.E.1 With guidance, use a strategy to evaluate information for research purposes.			
5.C.1 Independently or collaboratively, create a digital product using two or more tools.			
5.IP.1 With guidance, demonstrate an understanding of ethical issues in copyright and fair use.			
5.IP.2 With guidance, create a citation.			
5.IP.3 With guidance, use strategies to avoid piracy and plagiarism.			
Computing in Society			
5.IC.1 Explain how technologies can change the future.			
5.SI.1 With guidance, use collaborative technology to compare and contrast diverse perspectives.			
Digital Citizenship			
5.SE.1 Recognize that there are real-world cybersecurity problems (i.e.hacking) when interacting online. (CYSEC)			
5.SE.2 Create secure authentication to insure privacy. (CYSEC)			
5.SE.3 Recognize that data-collection technology can be used to track navigation online. (CYSEC)			
5.SE.4 Apply strategies to keep your private information safe online. (CYSEC)			
5.RU.1 Demonstrate an understanding of the appropriate use of technology and information and the consequences of inappropriate use.			
5.RU.2 Use strategies that prevent and deal responsibly with cyberbullying and inappropriate behavior.			
5.RU.3 Develop a code of conduct, explain, and practice appropriate behavior and responsibilities while participating in an online community			
5.RU.4 Comply with Acceptable Use Policies.			

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Technology Systems			
6.NI.1 Explain how data is sent across networks.			
6.HS.1 Use hardware and/or software to complete a task.	[5]		
6.HS.2 Use software features to accomplish a goal.			
6.HS.3 Organize, store, and retrieve digital information with guidance.			
6.HS.4 Identify threats to technology systems. (CYSEC)			
6.HS.5 Identify security measures to protect technology systems. (CYSEC)			
6.T.1 Apply basic troubleshooting strategies.	[6]		
Computational Thinking			
6.PSA.1 Identify and test an algorithm to solve a problem.	[7]		
6.PSA.2 Debug a program that includes sequencing, loops, or conditionals.	[8]		
6.PSA.3 Compare and contrast the efficiencies of multiple solutions to a task.			
6.DCA.1 Collect and analyze data to support a claim.			
6.DD.1 Use programs that utilize combinations of loops, conditionals, and the manipulation of variables representing different data types.	[9]		
Information Literacy			
6.A.1 Use a variety of strategies to refine and revise search results.			
6.E.1 Evaluate information and its sources.			
6.C.1 Repurpose or remix original works following fair use guidelines.			
6.IP.1 With guidance, properly use copyrighted works, works in the creative commons, and works in the public domain.			
6.IP.2 Cite a variety of sources using the appropriate format.			
6.IP.3 Describe negative consequences of piracy and plagiarism.			
Computing in Society			
6.IC.1 Identify the positive and negative impacts of past, present, and future technology, including bias and accessibility			
6.SI.1 Use collaborative technology.			
6.SI.2 Identify how social interactions can impact a person's self-image.			
Digital Citizenship			
6.SE.1 Identify steps for responding to uncomfortable situations when interacting online. (CYSEC)			
6.SE.2 Identify basic methods to maintain digital privacy and security. (CYSEC)			
6.SE.3 Recognize that data-collection technology can be used to track navigation online. (CYSEC)			
6.SE.4 Identify threats to personal cybersecurity. (CYSEC)			
6.RU.1 Identify different forms of cyberbullying.			
6.RU.2 Identify strategies to stop cyberbullying.			
6.RU.3 Use appropriate digital etiquette in a variety of situations.			
6.RU.4 Understand the purpose of and comply with Acceptable Use Policies.			
6.DI.1 Describe personal online usage and determine how it affects identity on- and offline.			

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	Unit 1	Unit 2	Unit 3
Technology Systems			
7.NI.1 Model how data is sent from one computer to another across networks.			
7.HS.1 Compare and contrast hardware and/or software options to complete a task.			
7.HS.2 Use software features to accomplish a goal.			
7.HS.3 Organize, store, and retrieve digital information with minimal guidance.			
7.HS.4 Describe threats to technology systems. (CYSEC)			
7.HS.5 Explain how security measures protect technology systems. (CYSEC)			
7.T.1 Apply basic troubleshooting strategies.	[10]		
Computational Thinking			
7.PSA.1 Modify and test an algorithm to solve a problem.	[11]		
7.PSA.2 Debug a program that includes sequencing, loops, or conditionals.	[12]		
7.PSA.3 Compare and contrast the efficiencies of multiple solutions to a task.			
7.DCA.1 Represent data, in more than one way, to defend your claim.			
7.DD.1 Modify programs that utilize combinations of loops, conditionals, and the manipulation of variables representing different data types.	[13]		
Information Literacy			
7.A.1 Use a variety of strategies to refine and revise search results.			
7.E.1 Independently, evaluate information and its sources using student selected processes and strategies.			
7.C.1 Repurpose or remix original works following fair use guidelines.			
7.IP.1 With minimal guidance, properly use copyrighted works, works in the creative commons, and works in the public domain			
7.IP.2 Cite a variety of sources using the appropriate format.			
7.IP.3 Identify strategies to avoid personal works and the works of others from being pirated and plagiarized. (CYSEC)			
Computing in Society			
7.IC.1 Compare and contrast the impacts of technology, including bias and accessibility.			
7.SI.1 Use collaborative technology to gather and share information.			
7.SI.2 Identify how social interactions can impact a person's self-image.			
Digital Citizenship			
7.SE.1 Identify steps for responding to uncomfortable situations when interacting online. (CYSEC)			
7.SE.2 Identify a variety of methods to maintain digital privacy and security. (CYSEC)			
7.SE.3 Recognize that data-collection technology can be used to track navigation online. (CYSEC)			
7.SE.4 Describe how to respond to threats to personal cybersecurity. (CYSEC)			
7.RU.1 Describe different forms of cyberbullying and the effects on all parties involved.			
7.RU.2 Identify strategies to prevent and stop cyberbullying.			
7.RU.3 Use appropriate digital etiquette in a variety of situations.			
7.RU.4 Understand the purpose of and comply with Acceptable Use Policies.			
7.DI.1 Evaluate how digital identity can impact a person now and in the future.			

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	Unit 1	Unit 2	Unit 3
Technology Systems			
8.NI.1 Investigate how data is sent from one computer to another across networks.			
8.HS.1 Choose appropriate device/hardware/software to complete a task.			
8.HS.2 Use software features to accomplish a goal.	[14]		
8.HS.3 Organize, store, and retrieve digital information efficiently.			
8.HS.4 Describe ways to protect against threats to technology systems. (CYSEC)			
8.HS.5 Compare and contrast security measures used to protect technology systems. (CYSEC)			
8.T.1 Apply basic troubleshooting strategies.	[15]		
Computational Thinking			
8.PSA.1 Create and test an algorithm to solve a problem across disciplines.			
8.PSA.2 Debug a program that includes sequencing, loops, or conditionals.	[16]		
8.PSA.3 Compare and contrast the efficiencies of multiple solutions to a task.			
8.DCA.1 Represent data from multiple sources in order to defend or refute a claim.			
8.DD.1 Create programs that utilize combinations of loops, conditionals, and the manipulation of variables representing different data types.	[17]		
Information Literacy			
8.A.1 Use advanced search strategies to locate information online.			
8.E.1 Independently, evaluate information and its sources using student selected processes and strategies.			
8.C.1 Repurpose or remix original works following fair use guidelines.			
8.IP.1 Properly use copyrighted works, works in the creative commons, and works in the public domain.			
8.IP.2 Cite a variety of sources using the appropriate format.			
8.IP.3 Debate the risks and benefits of sharing personal works online (CYSEC)			
Computing in Society			
8.IC.1 Explore and create solutions for the negative impacts of technology, including bias and accessibility.			
8.SI.1 Use collaborative technology to communicate information to a specific audience.			
8.SI.2 Identify how social interactions can impact a person's self-image.			
Digital Citizenship			
8.SE.1 Identify steps for responding to uncomfortable situations when interacting online. (CYSEC)			
8.SE.2 Identify advanced methods to maintain digital privacy and security. (CYSEC)			
8.SE.3 Recognize that data-collection technology can be used to track navigation online. (CYSEC)			
8.SE.4 Discuss the consequences of identity theft. (CYSEC)			
8.RU.1 Describe different forms of cyberbullying and the effects on all parties involved.			
8.RU.2 Identify strategies to prevent and stop cyberbullying.			
8.RU.3 Use appropriate digital etiquette in a variety of situations.			
8.RU.4 Understand the purpose of and comply with Acceptable Use Policies.			
8.DI.1 Evaluate how digital identity can impact a person now and in the future.			

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Technology Systems			
9.NI.1 Describe the issues that impact network functionality (e.g., bandwidth, load, delay, topology).			
9.NI.2 Understand the implications of accessing publicly available Internet connections. (CYSEC)			
9.HS.1 Compare and contrast appropriate device/hardware/software to complete a task.			
9.HS.2 Define software and security patches/update. (CYSEC)			
9.HS.3 Explain why a backup is necessary. (CYSEC)			
9.T.1 Describe basic hardware and software problems using appropriate and accurate terminology.			
Computational Thinking			
9.PSA.1 Identify, recognize, and use an algorithm to solve a complex problem across disciplines.			
9.DCA.1 Collect and analyze complex data.			
Information Literacy			
9.A.1 Plan and employ effective research strategies to locate information.			
9.E.1 Evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.			
9.C.1 Create original works or responsibly repurpose or remix digital resources into new creations to communicate an idea.			
9.IP.1 Properly use copyrighted works, works in the creative commons, and works in the public domain.			
9.IP.2 Cite sources in a standard format to ethically reference the intellectual property of others.			
9.IP.3 Engage in positive, safe, legal and ethical behavior when using technology.			
Computing in Society			
9.IC.1 Evaluate how technology has impacted the workforce positively and negatively.			
9.SI.1 Identify how technology has affected our means of communication.			
Digital Citizenship			
9.SE.1 Recognize the effects sharing information online can have on others' privacy. (CYSEC)			
9.SE.2 Know how to modify account settings to protect privacy and security. (CYSEC)			
9.SE.3 Recognize that datacollection technology can be used to track navigation online. (CYSEC)			
9.SE.4 Describe ways to prevent identity theft. (CYSEC)			
9.RU.1 Apply cyberbullying prevention strategies.			
9.RU.2 Apply safe and ethical behaviors to personal electronic communication and interaction. (CYSEC)			
9.RU.3 Use appropriate digital etiquette in a variety of situations.			
9.RU.4 Understand the purpose of and comply with Acceptable Use Policies.			
9.DI.1 Manage a digital identity and be aware of the permanence of actions in the digital world. (CYSEC)			

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Technology Systems			
10.NI.1 Identify and define different network connection types (e.g., wifi, mobile data, ethernet).			
10.NI.2 Identify networkable devices.			
10.HS.1 Compare and contrast appropriate device/hardware/software to complete a task.			
10.HS.2 Recognize the importance of and effectively perform software and security patches/updates. (CYSEC)			
10.HS.3 Identify important data or systems that need redundancy. (CYSEC)			
10.T.1 Follow appropriate guidelines that convey systematic troubleshooting techniques to identify and fix errors.	[18]		
Computational Thinking			
10.PSA.1 Create and test an algorithm to solve a complex problem across disciplines.			
10.DCA.1 Represent complex data in more than one way to support a claim.			
Information Literacy			
10.A.1 Plan and employ effective research strategies to locate information.			
10.E.1 Evaluate the accuracy, perspective, credibility, and relevance of information, media, data, or other resources.			
10.C.1 Create original works or responsibly repurpose or remix digital resources into new creations to communicate an idea.			
10.IP.1 Properly use copyrighted works, works in the creative commons, and works in the public domain.			
10.IP.2 Cite sources in a standard format to ethically reference the intellectual property of others.			
10.IP.3 Engage in positive, safe, legal and ethical behavior when using technology.			
Computing in Society			
10.IC.1 Evaluate how technology has impacted the workforce positively and negatively.			
10.SI.1 Identify how technology has affected our means of communication.			
Digital Citizenship			
10.SE.1 Recognize the effects sharing information online can have on others' privacy. (CYSEC)			
10.SE.2 Know how to modify account settings to protect privacy and security. (CYSEC)			
10.SE.3 Recognize that datacollection technology can be used to track navigation online. (CYSEC)			
10.SE.4 Describe ways to prevent identity theft. (CYSEC)			
10.RU.1 Apply cyberbullying prevention strategies.			
10.RU.2 Apply safe and ethical behaviors to personal electronic communication and interaction. (CYSEC)			
10.RU.3 Use appropriate digital etiquette in a variety of situations.			
10.RU.4 Understand the purpose of and comply with Acceptable Use Policies.			
10.DI.1 Manage a digital identity and be aware of the permanence of actions in the digital world. (CYSEC)			

[1] This would be all missions

[2] Mission 2 and the teachers' manual discuss troubleshooting techniques

[3] 3.5 introduces the debugger

Mission 4 begins the use of sequencing, loops and conditionals

[4] This would be the remixes that begin in Mission 4 depending on the rubric the teacher uses

[5] All missions use a combination of hardware and software to complete a task

[6] Mission 2 and the teachers' manual discuss troubleshooting techniques

[7] This begins in Mission 4

[8] 3.5 introduces the debugger

Mission 4 begins the use of sequencing, loops and conditionals

[9] 3.8 introduces the use of variables

Mission 4 begins the use of loops and conditionals and discusses data types

7.5 introduces the use of lists

[10] Mission 2 and the teachers' manual discuss troubleshooting techniques

[11] Remixes take what you created in a mission and modifies it to solve a new problem of your choice

[12] 3.5 introduces the debugger

Mission 4 begins the use of sequencing, loops and conditionals

[13] 3.8 introduces the use of variables

Mission 4 begins the use of loops and conditionals and discusses data types

7.5 introduces the use of lists

[14] All missions utilize software features to accomplish a goal

[15] Mission 2 and the teachers' manual discuss troubleshooting techniques

[16] 3.5 introduces the debugger

Mission 4 begins the use of sequencing, loops and conditionals

[17] 3.8 introduces the use of variables

Mission 4 begins the use of loops and conditionals and discusses data types

7.5 introduces the use of lists

[18] Mission 2 and the teachers' manual discuss troubleshooting techniques