

Windham School District

Digital Literacy Curriculum

Approved by the Windham School Board on September 4, 2018

Computing and Society: K-2

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>Early elementary school students are introduced to foundational concepts by integrating basic digital literacy skills with simple ideas about computational thinking. They learn that digital tools help people do things better, or more easily, or do some things that could otherwise not be done at all. Through the exploration of computing devices and digital tools, students begin to understand if, when, and how they should use technology.</p> <p>Basic technology skills may be learned through the use of manipulatives, pencil-and-paper, and other manual methods through which children acquire basic skills. Many skills, including safety, introduced in this grade span will be further developed in later grade spans.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • K-2.CAS.a – Safety and Security • K-2.CAS.a.1 • K-2.CAS.a.2 • K-2.CAS.a.3-4 • K-2.CAS.a.5 • K-2.CAS.a.6-8 • K-2.CAS.b – Ethics and Laws • K-2.CAS.c – Interpersonal and Societal Impact 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Understand basic safety and security concepts and basic understanding of safe information sharing. • Explore what it means to be a good digital citizen. • Observe and describe how people use technology and how technology can influence people. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p> <p>Students will be able to explain why there are rules for technology at home or at school.</p> <p>Use electrical devices safely and in moderation (e.g., unplug devices by pulling the plug rather than the cord, do not mix water/food and electronic devices, avoid gaming and walking).</p> <p>Identify safe and unsafe examples of online communications.</p> <p>Define good digital citizenship as using technology safely, responsibly, and ethically.</p> <p>Identify and describe how people (e.g., students, parents, policemen) use many types of technologies in their daily work and personal lives.</p>	<p>ESSENTIAL QUESTIONS</p> <p>How is being safe when visiting websites similar to staying safe in real life?</p> <p>What types of personal information are private?</p> <p>How do you create effective usernames that protect your private information?</p> <p>What kinds of information are appropriate to be put online?</p> <p>How does the information you put online leave a digital footprint?</p> <p>How do you know which websites are good for you to visit?</p>
	Acquisition	
<p><i>Students will know...</i></p> <p>Students will be able to discuss how to be a good citizen online and how to keep safe by not sharing personal information.</p> <p>Students will be able to identify how people in different jobs use technology in different ways.</p>	<p><i>Students will be skilled at...</i></p> <p>Students will be able to model turning devices on and off, plugging in and unplugging devices, taking devices to a work spot before turning them on, and returning devices to their proper place when finished using them.</p>	

		<p>Students will be able to model how to cite images, text and other work taken from the internet in an age appropriate way.</p> <p>Students will be able to locate and cite the author and title or Website name and URL (web address).</p>
<i>Used in Content Area Standards</i>		<i>21st Century Skills</i>

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Digital Tools and Collaboration: K-2

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>Early elementary school students are introduced to foundational concepts by integrating basic digital literacy skills with simple ideas about computational thinking. They learn that digital tools help people do things better, or more easily, or do some things that could otherwise not be done at all. Through the exploration of computing devices and digital tools, students begin to understand if, when, and how they should use technology.</p> <p>Basic technology skills may be learned through the use of manipulatives, pencil-and-paper, and other manual methods through which children acquire basic skills. Many skills, including safety, introduced in this grade span will be further developed in later grade spans.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • K-2.DTC.a – Digital Tools • K-2.DTC.a.1-3 • K-2.DTC.a.4 • K-2.DTC.b – Collaboration and Communication • K-2.DTC.b.1 • K-2.DTC.b.2-3 • K-2.DTC.c – Research • K-2.DTC.c.1 • K-2.DTC.c.2 • K-2.DTC.c.3 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Develop basic use of digital tools and research skills to create simple artifacts. • Develop basic use of digital tools to communicate or exchange information. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p> <p>Use appropriate digital tools individually and collaboratively to create, review, and revise simple artifacts that include text, images and audio.</p> <p>Collaboratively use digital tools and media resources to communicate key ideas and details in a way that informs, persuades, and/or entertains.</p> <p>Create an artifact individually and collaboratively that answers a research question, while clearly expressing thoughts and ideas.</p>	<p>ESSENTIAL QUESTIONS</p> <p>What does it mean to go online and use the internet?</p> <p>How does the internet provide a means of communicating with real people?</p> <p>Compare and contrast how you are connected to different people and places, in person and on the Internet.</p> <p>What does a map of your online community look like?</p>
	Acquisition	
<p><i>Students will know...</i></p>	<p><i>Students will be skilled at...</i></p> <p>Students will be able to utilize many different ways to produce work using technology. Students will be able to create a document, edit and revise their document, and add images and/or audio.</p> <p>Students will be able to work together online to research, synthesize, and present information using a given program with the intent to convey information, persuade an audience, or entertain.</p> <p>Students will be able to research to find the answer to a question or to find information on a given</p>	

		topic. Students will be able to present their information digitally.
<i>Used in Content Area Standards</i>		<i>21st Century Skills</i>

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Computing Systems: K-2

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>Early elementary school students are introduced to foundational concepts by integrating basic digital literacy skills with simple ideas about computational thinking. They learn that digital tools help people do things better, or more easily, or do some things that could otherwise not be done at all. Through the exploration of computing devices and digital tools, students begin to understand if, when, and how they should use technology.</p> <p>Basic technology skills may be learned through the use of manipulatives, pencil-and-paper, and other manual methods through which children acquire basic skills. Many skills, including safety, introduced in this grade span will be further developed in later grade spans.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • K-2.CS.a – Computing Devices • K-2.CS.a.1-3 • K-2.CS.a.4 • K-2.CS.b – Human and Computer Partnership • K-2.CS.c – Networks <p>Used in Content Area Standards</p>	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Understand that computing devices take many forms and have different components. • Consider basic structures of computing systems and networks. • Explore human and computer differences to determine when technology is beneficial. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p> <p>Operate a variety of computing systems (e.g., turn on, use input/output devices such as a mouse, keyboard, or touch screen; find, navigate, launch a program).</p>	<p>ESSENTIAL QUESTIONS</p> <p>What is a computer?</p> <p>What can humans do that computers can't do (yet)?</p> <p>What would my life and the world be like without computers?</p>
	Acquisition	
<p><i>Students will know...</i></p> <p>Computers consist of hardware and software</p>	<p><i>Students will be skilled at...</i></p> <p>Students will be able to operate computers, ipads, smartboards, digital cameras.</p>	
21st Century Skills		

Stage 2 - Evidence

Evaluative Criteria	Assessment Evidence
	ASSESSMENT:

Computational Thinking: K-2

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>Early elementary school students are introduced to foundational concepts by integrating basic digital literacy skills with simple ideas about computational thinking. They learn that digital tools help people do things better, or more easily, or do some things that could otherwise not be done at all. Through the exploration of computing devices and digital tools, students begin to understand if, when, and how they should use technology.</p> <p>Basic technology skills may be learned through the use of manipulatives, pencil-and-paper, and other manual methods through which children acquire basic skills. Many skills, including safety, introduced in this grade span will be further developed in later grade spans.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • K-2.CT.a – Abstratction • K-2.CT.b – Algorithms • K-2.CT.c – Data • K-2.CT.c.1-2 • K-2.CT.c.3 • K-2.CT.c.4-5 • K-2.CT.d – Programming and Development • K-2.CT.d.1-2 • K-2.CT.d.3 • K-2.CT.e – Modeling and Simluation 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Explore abstraction through identification of common attributes. • Create and enact a simple algorithm. • Understand how information can be collected, used, and presented with computing devices or digital tools. • Create a simple computer “program.” • Use basic models and simulations. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p> <p>Individually and collaboratively propose a solution to a problem or question based on an analysis of information.</p> <p>Individually or collaboratively create a simple program using visual instructions or tools that do not require a textual programming language (e.g., “unplugged” programming activities, a block-based programming language).</p>	<p>ESSENTIAL QUESTIONS</p> <p>What problems can computers solve and what can’t they solve?</p>
Acquisition		
<p><i>Students will know...</i></p> <p>Computer programs provide a means to solve problems</p>	<p><i>Students will be skilled at...</i></p> <p>Students will be able to create surveys (i.e. what is your favorite lunch) and represent their data (i.e. pictograph, bar graph, etc.) either digitally or non-digitally.</p> <p>Students will be able to write code using coding websites and apps.</p>	
Used in Content Area Standards		21st Century Skills

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Computing and Society: 3-5

Stage 1 Desired Results

ESTABLISHED GOALS:

Upper elementary students learn to differentiate tasks that are best done by computing systems or digital tools and those best done by humans. Students explore a variety of computing devices and digital tools and further develop their computational thinking problem solving skills. As students progress through grades 3–5, they begin to evaluate the uses and limitations of existing artifacts and modify parts of existing artifacts to develop something new. Students are able to describe and document their computational work in writing, using presentation tools and through demonstrations of their work.

With increased maturity, students in third through fifth grade are able to engage in learning in ways that are both more systematic and creative. Upper elementary is a critical time to engage students in the DLCS practices. Students’ capabilities as creators and problem solvers build on their experiences in K–2. They continue to develop concepts through exploration, discovery, and creativity with the guidance, support, and encouragement of their educator. Standards for this grade span allow teacher flexibility in deciding when students are ready to use technology.

Content Standards:

- 3-5.CAS.a – Safely and Security
- 3-5.CAS.a.1-3

Transfer

Students will be able to

- Understand safety and security concepts, safe and appropriate use of technology, and how to deal with cyberbullying.
- Demonstrate responsible use of technology, digital content, and interactions.
- Observe and describe how technology can influence people.
- Basic understanding of digital media messaging and equity of access to technology.

Meaning

ENDURING UNDERSTANDINGS

Students will understand that...

- The proper use and operation of security technologies (e.g., passwords, virus protection software, spam filters, pop-up blockers, cookies)
- How to employ safe practices and avoid the potential risks/dangers associated with various forms of online communications, downloads, linking, Internet purchases, advertisements, and inappropriate content within constrained environments.
- Demonstrate responsible use of computers, peripheral devices, and resources as outlined in school rules (Acceptable Use Policy [AUP]).
- Describe the purpose of copyright and the possible consequences for inappropriate use of digital artifacts that are protected by copyright.
- Use critical thinking to explain how access to technology helps empower individuals and groups (e.g., gives them access to information, the ability to communicate with others around the world, allows them to buy and sell things).

ESSENTIAL QUESTIONS

How can you identify if you or a friend is being cyberbullied?

What are some strategies for dealing with cyberbullying responsibly?

How is giving credit a sign of respect for others’ work?

Compare and contrast your responsibilities to your online and offline communities.

<ul style="list-style-type: none"> ● 3-5.CAS.a.4 ● 3-5.CAS.a.5 ● 3-5.CAS.a.6-7 ● 3-5.CAS.b – Ethics and Laws ● 3-5.CAS.b.1 ● 3-5.CAS.b.2-3 ● 3-5.CAS.b.4 ● 3-5.CAS.b.5 ● 3-5.CAS.c – Interpersonal and Societal Impact ● 3-5.CAS.c.1-3 ● 3-5.CAS.c.4 ● 3-5.CAS.c.5-6 ● 3-5.CAS.c.7 	<ul style="list-style-type: none"> ● Identify the impact of social media and cyber bullying on individuals, families, and society. 	
Acquisition		
	<p><i>Students will know...</i></p> <ul style="list-style-type: none"> ● 	<p><i>Students will be skilled at...</i></p> <p>Students will be able to explain why it is important to not share passwords.</p> <p>Students will be able to understand the limits of copyright and correctly cite sources in work they complete.</p> <p>Students will be able to use technology and equipment correctly and responsibly. Students should also be able to show that they understand the rules.</p> <p>Students will understand the limits of copyright and correctly cite sources in work they complete.</p> <p>Students will be able to cite sources used in projects accurately and correctly.</p> <p>Students will be able to explain and use the elements of a website URL: name of the site, web address, domain, and extensions</p> <p>Students will be able to communicate with others across the country by using online platforms. For example, if you are teaching regions/climates, your students can communicate with other students in those regions/climates.</p> <p>Students will be able to recognize the impact of cyberbullying in peers. Signs to look for include excessive tardiness or absences, homework issues, inconsistent work, increase in unexpected behaviors.</p> <p>Students will be able to discuss cyberbullying and give examples. Students will also be able to report cyberbullying to an adult.</p>
Used in Content Area Standards		21st Century Skills

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Digital Tools and Collaboration: 3-5

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>Upper elementary students learn to differentiate tasks that are best done by computing systems or digital tools and those best done by humans. Students explore a variety of computing devices and digital tools and further develop their computational thinking problem solving skills. As students progress through grades 3–5, they begin to evaluate the uses and limitations of existing artifacts and modify parts of existing artifacts to develop something new. Students are able to describe and document their computational work in writing, using presentation tools and through demonstrations of their work.</p> <p>With increased maturity, students in third through fifth grade are able to engage in learning in ways that are both more systematic and creative. Upper elementary is a critical time to engage students in the DLCS practices. Students’ capabilities as creators and problem solvers build on their experiences in K–2. They continue to develop concepts through exploration, discovery, and creativity with the guidance, support, and encouragement of their educator. Standards for this grade span allow teacher flexibility in deciding when students are ready to use technology.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • 3-5.DTC.a – Digital Tools • 3-5.DTC.a.1 • 3-5.DTC.a.2 • 3-5.DTC.a.3 • 3-5.DTC.b – Collaboration and Communication 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Use digital tools and keyboarding skills to publish multimedia artifacts. • Use digital tools to communicate or exchange information. • Develop intermediate research skills to create artifacts and attribute credit. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> • Use digital tools (local and online) to manipulate and publish multimedia artifacts • How to communicate key ideas and details individually or collaboratively in a way that informs, persuades, and/or entertains using digital tools and media-rich resources • How to evaluate digital resources for accuracy, relevancy, and appropriateness • How to create an artifact that answers a research question clearly and communicates thoughts and ideas 	<p>ESSENTIAL QUESTIONS</p> <p>What are the norms for collaborating in our classroom?</p> <p>How do we participate responsibly and respectfully in an online community?</p> <p>What kinds of creative work do you make or share digitally? Is it fair to share others’ creative work this way?</p>
Acquisition		
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> • Type five words-per-minute times grade level (e.g., for Grade 5, type 25 words/minute) 	<p><i>Students will be skilled at...</i></p> <p>Students will be able to type documents throughout the school year in all subjects.</p> <p>Students will be able to touch-type letters on the keyboard with both hands using home row keys.</p>	

<ul style="list-style-type: none"> • 3-5.DTC.b.1 • 3-5.DTC.b.2 • 3-5.DTC.c - Research • 3-5.DTC.c.1-2 • 3-5.DTC.c.3 • 3-5.DTC.c.4 • 3-5.DTC.c.5 • 3-5.DTC.c.6-7 		<p>Students will be able to demonstrate proper keyboarding techniques for speed and accuracy.</p> <p>Students will be able to appropriately use hand/key positions to type all letters.</p> <p>Students will create, share, and publish their work with peers, adults, and the larger community.</p> <p>Students will be able to publish information in a variety of forms.</p> <p>Give students opportunities to communicate and share their understanding or knowledge of a topic.</p> <p>Students will be able to create videos composed of music, voice, sound effects, and include sound in multimedia presentations.</p> <p>Students work together on one project at the same time using Google Apps.</p> <p>Model to students how to use websites and how to judge which website is appropriate for their age and content.</p> <p>Students will be able to pick a topic, research, and create an artifact to present to peers. Students will be able to present digitally to their peers.</p>
Used in Content Area Standards		21st Century Skills

Stage 2 - Evidence

Evaluative Criteria	Assessment Evidence
	ASSESSMENT:
	OTHER EVIDENCE:

Computing Systems: 3-5

Stage 1 Desired Results

ESTABLISHED GOALS:

Upper elementary students learn to differentiate tasks that are best done by computing systems or digital tools and those best done by humans. Students explore a variety of computing devices and digital tools and further develop their computational thinking problem solving skills. As students progress through grades 3–5, they begin to evaluate the uses and limitations of existing artifacts and modify parts of existing artifacts to develop something new. Students are able to describe and document their computational work in writing, using presentation tools and through demonstrations of their work.

With increased maturity, students in third through fifth grade are able to engage in learning in ways that are both more systematic and creative. Upper elementary is a critical time to engage students in the DLCS practices. Students’ capabilities as creators and problem solvers build on their experiences in K–2. They continue to develop concepts through exploration, discovery, and creativity with the guidance, support, and encouragement of their educator. Standards for this grade span allow teacher flexibility in deciding when students are ready to use technology.

Content Standards:

- 3-5.CS.a – Computing Devices
- 3-5.CS.a.1-2
- **3-5.CS.a.3**
- **3-5.CS.a.4**
- 3-5.CS.a.5-6

Transfer

Students will be able to

- Understand different computing devices and their components.
- Use different computing devices and troubleshoot and solve simple problems.
- Differentiate tasks that are best done by computing systems and humans.
- Understand the components of a network and basic network authentication.
- Basic understanding of services.

Meaning

ENDURING UNDERSTANDINGS

Students will understand that...

Students will be able to understand how they and devices are connected to each other on the internet.

ESSENTIAL QUESTIONS

What is a computer?

What can humans do that computers can’t do (yet)?

What would my life and the world be like without computers?

Acquisition

Students will know...

Students will be skilled at...

Students will be able to save and retrieve a document from a folder.

Students will be able to name and create folders.

<ul style="list-style-type: none"> • 3-5.CS.b – Human and Computer Partnerships • 3-5.CS.b.1 • 3-5.CS.b.2 • 3-5.CS.b.3 • 3-5.CS.c – Networks • 3-5.CS.c.1 • 3-5.CS.c.2-4 • 3-5.CS.d – Services 		<p>Students will be able to perform a web search on a topic and determine the best sources to use for the assigned topic.</p> <p>Students will be able to use basic troubleshooting techniques.</p> <p>Students will be able to use hardware and software appropriately.</p> <p>Students will be able to use a variety of software programs.</p> <p>Students will be able to understand how they and devices are connected to each other on the internet.</p>
<i>Used in Content Area Standards</i>		<i>21st Century Skills</i>

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Computational Thinking: 3-5

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>Upper elementary students learn to differentiate tasks that are best done by computing systems or digital tools and those best done by humans. Students explore a variety of computing devices and digital tools and further develop their computational thinking problem solving skills. As students progress through grades 3–5, they begin to evaluate the uses and limitations of existing artifacts and modify parts of existing artifacts to develop something new. Students are able to describe and document their computational work in writing, using presentation tools and through demonstrations of their work.</p> <p>With increased maturity, students in third through fifth grade are able to engage in learning in ways that are both more systematic and creative. Upper elementary is a critical time to engage students in the DLCS practices. Students’ capabilities as creators and problem solvers build on their experiences in K–2. They continue to develop concepts through exploration, discovery, and creativity with the guidance, support, and encouragement of their educator. Standards for this grade span allow teacher flexibility in deciding when students are ready to use technology.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • 3-5.CT.a – Abstraction • 3-5.CT.a.1 • 3-5.CT.a.2 • 3-5.CT.a.3 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Create a new representation and breakdown a larger problem into sub problems. • Write, debug, and analyze an algorithm. • Understand databases and organizing and transforming data. • Write, debug, and correct programs using successively sophisticated techniques. • Create a model and use data from a simulation. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p>	<p>ESSENTIAL QUESTIONS</p> <p>What problems can computers solve and what can’t they solve?</p>
Acquisition		
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> • 	<p><i>Students will be skilled at...</i></p> <p>Students will be able to use media and technology resources to organize and present information digitally.</p> <p>Students will be able to use multimedia technology tools to organize and represent data in the content areas.</p> <p>Students will be able to use a graphic organizers to sequence and organize information.</p> <p>Students will be able to create and write a program.</p> <p>Students will be able to use coding apps to create algorithms to solve problems.</p> <p>Students will be able to survey the class about a topic or question and organize the data using technology.</p>	

<ul style="list-style-type: none"> • 3-5.CT.b – Algorithms • 3-5.CT.c – Data • 3-5.CT.c.1 • 3-5.CT.c.2 • 3-5.CT.d – Programming and Development • 3-5.CT.d.1 • 3-5.CT.d.2-4 • 3-5.CT.e – Modeling and Simulation • 3-5.CT.e.1-2 • 3-5.CT.e.3 		<p>Students will work collaboratively with classmates to answer questions after watching videos and performing experiments.</p>
Used in Content Area Standards	21st Century Skills	

Stage 2 - Evidence

Evaluative Criteria	Assessment Evidence
	ASSESSMENT:
	OTHER EVIDENCE:

Computing and Society: 6-8

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>The goal for middle school students is to define problems more precisely, to conduct a more thorough process of selecting the best devices, tools, and solutions. Students learn to differentiate problems or sub-problems that are best solved by computing systems or digital tools and those best solved by humans. Students further develop their computational thinking problem solving skills, which facilitates the use of technology.</p> <p>By the time students reach middle school, they should have had numerous experiences in using technology to create artifacts and solve problems. Active engagement of middle school students with the practices is critical: students generally make up their minds about whether they identify with science and engineering by the time they leave grade 8. Students should have opportunities to develop the skills necessary for a meaningful progression of development in order to engage in reasoning, which is critical to success in civic life, post-secondary education, and career.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • 6-8.CAS.a – Safety and Security • 6-8.CAS.a.1 • 6-8.CAS.a.2 • 6-8.CAS.a.3 • 6-8.CAS.a.4 • 6-8.CAS.a.5 • 6-8.CAS.b – Ethics and Laws 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Understand safety and security concepts, online identity and privacy, and how to deal with cyberbullying and inappropriate content. • Demonstrate responsible use of technology and laws regarding ownership of material/ideas, licensing, and fair use. • Understand consequences of inappropriate technology use, including harassment and sexting. • Examine the impact of emerging technology in schools, communities, and societies. • Evaluate digital media bias and messaging. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS <i>Students will understand that...</i></p> <p>Students understand how to practice appropriate digital citizenship. Digital Citizenship is creating, participating in, and observing online content.</p> <p>Students can identify appropriate and inappropriate content on the internet, and know what to do when they see it.</p> <p>Students have a general understanding of technology’s local and global impact.</p> <p>Students can distinguish when and the ways in which misinformation is spread via the media and technology.</p>	<p>ESSENTIAL QUESTIONS</p> <p>What can we do to keep ourselves safe in our social media environments?</p> <p>What are the opportunities/pitfalls of connecting with people online?</p> <p>What can we do to stand up against bullying and cyberbullying?</p> <p>How can we manage and minimize the negative impact of our “digital footprint”?</p> <p>How can we preserve and protect our health when using technology?</p> <p>How can we use technology and teamwork to help local and global communities?</p>

<ul style="list-style-type: none"> • 6-8.CAS.b.1 • 6-8.CAS.b.2-5 • 6-8.CAS.b.6 • 6-8.CAS.b.7-8 • 6-8.CAS.b.9 • 6-8.CAS.c – Interpersonal and Societal Impact • 6-8.CAS.c.1 • 6-8.CAS.a.2-3 • 6-8.CAS.c.4 • 6-8.CAS.c.5 	Students can identify biases when using digital content and analyze in what ways those biases influence that content.	
	Acquisition	
	<i>Students will know...</i>	<i>Students will be skilled at...</i> Students understand what cyberbullying is, ways in which it can be avoided, and what to do when it is occurring. Students are aware of and act in accordance with the school's Acceptable Use Policy. Students understand content creators are owed credit and there are laws protecting that right. Students are expected to apply Creative Commons licenses to their original content. Applies to teachers' content as well.
Used in Content Area Standards		21st Century Skills

Stage 2 - Evidence	
<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Digital Tools and Collaboration: 6-8

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>The goal for middle school students is to define problems more precisely, to conduct a more thorough process of selecting the best devices, tools, and solutions. Students learn to differentiate problems or sub-problems that are best solved by computing systems or digital tools and those best solved by humans. Students further develop their computational thinking problem solving skills, which facilitates the use of technology.</p> <p>By the time students reach middle school, they should have had numerous experiences in using technology to create artifacts and solve problems. Active engagement of middle school students with the practices is critical: students generally make up their minds about whether they identify with science and engineering by the time they leave grade 8. Students should have opportunities to develop the skills necessary for a meaningful progression of development in order to engage in reasoning, which is critical to success in civic life, post-secondary education, and career.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • 6-8.DTC.a – Digital Tools • 6-8.DTC.a.1-2 • 6-8.DTC.a.3 • 6-8.DTC.a.4 • 6-8.DTC.a.5 • 6-8.DTC.b – Collaboration and Communication • 6-8.DTC.b.1 • 6-8.DTC.b.2-3 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Use a variety of digital tools to create artifacts, online content, and online surveys. • Understand that different digital tools have different uses. • Communicate and publish online. • Advance research skills. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <p>Students should be able to find and discern between credible and untrustworthy online sources.</p>	<p>ESSENTIAL QUESTIONS</p> <p>What is the difference between a primary and secondary source?</p> <p>What strategies can we use to evaluate material found online?</p> <p>How will we show appreciation and respect for any intellectual property provided for free online?</p> <p>How can I share my interests and skills with others?</p>
Acquisition		
<p><i>Students will know...</i></p>	<p><i>Students will be skilled at...</i></p> <p>Students utilize a variety of different resources (video, audio, text) to inform a single project.</p> <p>Students work individually and/or collaboratively to create original online content using apps and extensions, such as the Google Suite. Online content includes, but is not limited to, Google Sites, class Youtube channels, class social media accounts, etc.</p> <p>Students will understand that content has a specific purpose that connects students to their audiences.</p> <p>Students answer a research question through responsibly collected sources to create a product that</p>	

<ul style="list-style-type: none"> • 6-8.DTC.c – Research • 6-8.DTC.c.1 • 6-8.DTC.c.2 • 6-8.DTC.c.3 • 6-8.DTC.c.4 • 6-8.DTC.c.5 		demonstrates understanding of topic. Product examples include, but are not limited to, posters, papers/reports, websites, infographics (piktochart) and videos.
<i>Used in Content Area Standards</i>		<i>21st Century Skills</i>

Stage 2 - Evidence

<i>Evaluative Criteria</i>	<i>Assessment Evidence</i>
	ASSESSMENT:
	OTHER EVIDENCE:

Computing Systems: 6-8

Stage 1 Desired Results

<p>ESTABLISHED GOALS:</p> <p>The goal for middle school students is to define problems more precisely, to conduct a more thorough process of selecting the best devices, tools, and solutions. Students learn to differentiate problems or sub-problems that are best solved by computing systems or digital tools and those best solved by humans. Students further develop their computational thinking problem solving skills, which facilitates the use of technology.</p> <p>By the time students reach middle school, they should have had numerous experiences in using technology to create artifacts and solve problems. Active engagement of middle school students with the practices is critical: students generally make up their minds about whether they identify with science and engineering by the time they leave grade 8. Students should have opportunities to develop the skills necessary for a meaningful progression of development in order to engage in reasoning, which is critical to success in civic life, post-secondary education, and career.</p> <p><i>Content Standards:</i></p> <ul style="list-style-type: none"> • 6-8.CS.a – Computing Devices • 6-8.CS.a.1-4 • 6-8.CS.a.5 • 6-8.CS.a.6 • 6-8.CS.a.7 • 6-8.CS.b – Human and Computer Partnerships • 6-8.CS.b.1 • 6-8.CS.b.2 	Transfer	
	<p><i>Students will be able to</i></p> <ul style="list-style-type: none"> • Understand hardware and software components of a computing device; troubleshoot hardware and software problems. • Use a variety of computing devices to manipulate data. • Differentiate tasks/problems best solved by computing systems or by humans. • Understand that network components carry out specific functions to connect computing devices, people, and services. • Understand the capabilities services can provide. 	
	Meaning	
	<p>ENDURING UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <p>Students understand how technology is used by people to accomplish tasks too complicated for humans to do alone and too creative for technology to do alone.</p>	<p>ESSENTIAL QUESTIONS</p> <p>What is a computer?</p> <p>What can humans do that computers can't do (yet)?</p> <p>What would my life and the world be like without computers?</p>
Acquisition		
<p><i>Students will know...</i></p> <p>Individually and collaboratively design and demonstrate the use of a device (e.g., robot, e-textile) to accomplish a task.</p> <p>Identify steps involved in diagnosing and solving routine hardware and software problems (e.g., power, connections, application window or toolbar, cables, ports, network resources, video, sound) that occur during everyday computer use.</p> <p>Describe how humans and machines interact to solve problems that cannot be solved by either alone (e.g.,</p>	<p><i>Students will be skilled at...</i></p> <p>Students can use technology to build, program, and/or engineer a device to accomplish a task.</p> <p>Students understand the steps to basic troubleshooting with regards to classroom technology (chromebooks, iPads, smartphones, etc.)</p> <p>Students understand how services (GPS, cloud-based info, camera, etc.) are utilized by their devices to achieve device-specific goals.</p>	

<ul style="list-style-type: none"> • 6-8.CS.c – Networks • 6-8.CS.d - Services • 6-8.CS.d.1 	<p>“big data” experiments that involve drawing conclusions by analyzing vast amounts of data).</p> <p>Identify capabilities of devices that are enabled through services (e.g., a wearable device that stores fitness data in the cloud, a mobile device that uses location services for navigation).</p>	
Used in Content Area Standards		21st Century Skills

Stage 2 - Evidence

Evaluative Criteria	Assessment Evidence
	ASSESSMENT:
	OTHER EVIDENCE:

Computational Thinking: 6-8

Stage 1 Desired Results

ESTABLISHED GOALS:

The goal for middle school students is to define problems more precisely, to conduct a more thorough process of selecting the best devices, tools, and solutions. Students learn to differentiate problems or sub-problems that are best solved by computing systems or digital tools and those best solved by humans. Students further develop their computational thinking problem solving skills, which facilitates the use of technology.

By the time students reach middle school, they should have had numerous experiences in using technology to create artifacts and solve problems. Active engagement of middle school students with the practices is critical: students generally make up their minds about whether they identify with science and engineering by the time they leave grade 8. Students should have opportunities to develop the skills necessary for a meaningful progression of development in order to engage in reasoning, which is critical to success in civic life, post-secondary education, and career.

Content Standards:

- 6-8.CT.a - Abstraction
- 6-8.CT.a.1
- **6-8.CT.a.2**
- 6-8.CT.a.3
- 6-8.CT.b – Algorithms
- 6-8.CT.b.1
- **6-8.CT.b.2**
- **6-8.CT.b.3**
- 6-8.CT.b.4

Transfer

Students will be able to

- Create a new representation, define functions, and use decomposition.
- Write, debug, and analyze advanced algorithms and basic programs.
- Understand how computing devices represent and manipulate information.
- Create, modify, and manipulate databases.
- Use a variety of data collection devices.
- Create a model and use and modify a simulation for analysis.

Meaning

ENDURING UNDERSTANDINGS

Students will understand that...

ESSENTIAL QUESTIONS

What problems can computers solve and what can't they solve?

Acquisition

Students will know...

Define a simple function that represents a more complex task/problem and can be reused to solve similar tasks/problems.

Individually and collaboratively decompose a problem and create a sub-solution for each of its parts (e.g., video game, robot obstacle course, making dinner).

Students will be skilled at...

Students can identify patterns and similarities (functions) in larger processes, and can see that pattern or similarity at work in other places.

Students can break down a complex problem into simpler pieces and then solve those simpler pieces.

<ul style="list-style-type: none"> • 6-8.CT.b.5 • 6-8.CT.c – Data • 6-8.CT.d – Programming and Development • 6-8.CT.d.1-2 • 6-8.CT.d.3 • 6-8.CT.d.4 • 6-8.CT.d.5-6 • 6-8.CT.e – Modeling and Simulation • 6-8.CT.e.1-2 • 6-8.CT.e.3 	<p>Use logical reasoning to predict outputs given varying inputs.</p> <p>Create a program, individually and collaboratively, that implements an algorithm to achieve a given goal.</p> <p>Implement problem solutions using a programming language, including all of the following: looping behavior, conditional statements, expressions, variables, and functions.</p> <p>Select and use computer simulations, individually and collaboratively, to gather, view, analyze, and report results for content-related problems (e.g., migration, trade, cellular function)</p>	<p>Students can apply learned functions to new situations and predicts what is going to happen.</p> <p>Students can write computer code to solve a problem or demonstrate understanding.</p> <p>Students can write efficient computer code which uses complex methods, such as looping behavior, conditional statements (if __, then __), expressions, variables, functions, etc.</p> <p>Students can find, use, and interpret an appropriate computer simulation and respond to inquiries relating to it.</p>
Used in Content Area Standards		21st Century Skills

Stage 2 - Evidence	
Evaluative Criteria	Assessment Evidence
	ASSESSMENT:
	OTHER EVIDENCE:

Sources:

Massachusetts Department of Elementary and Secondary Education. (2016, June). 2016 Massachusetts Digital Literacy and Computer Science (DLCS) Curriculum Framework. Retrieved from <http://www.doe.mass.edu/frameworks/dlcs.pdf>

Norton Public Schools. (n.d.). Digital Literacy & Computer Science Standards. Retrieved from <https://sites.google.com/norton.k12.ma.us/npsdlcs>