Kindergarte			<i></i>
Standard	I/M/ R	\checkmark	Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	I	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	I	\checkmark	
Explore social and ethical impacts of technology	I	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	I	\checkmark	
ISTE Standards for Students			
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	I	\checkmark	
Computer Literacy			
Operate Basic Device Functionality			
Turn on the computer.	I	\checkmark	
Login and logoff the computer.	I	\checkmark	
Use a pointing device to click menus and icons.	I	\checkmark	
Open programs, web apps, and documents.	I	\checkmark	
Use buttons and media players.	I	\checkmark	
Hardware and Software			
Demonstrate an understanding of the relationship between hardware and software.	Т		
Identify major computer components.	1		
Apply strategies for identifying and solving routine problems that occur during everyday computer use.	1	\checkmark	
Digital Media	I		
Watch videos and use play, pause, rewind and forward buttons.	I	\checkmark	
Use painting/drawing tools and other applications to create and edit work.	I	\checkmark	
Research			
Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information.	I		
Perform basic searches on a database (e.g., library card catalog) to locate information.	I	\checkmark	
Identify and analyze the purpose of a media message (inform, persuade, entertain).	I	\checkmark	
Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages).	I	\checkmark	
Computational Thinking Create algorithms, or series of ordered steps, to solve problems.	I	\checkmark	

Computing SystemsSelect and operate appropriate software to perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.IUse appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).IDescribe basic hardware and software problems using accurate terminology.INetworks and the InternetIExplain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized access.I
perform a variety of tasks, and recognize that users have different needs and preferences for the technology they use.IUse appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).IDescribe basic hardware and software problems using accurate terminology.INetworks and the InternetIExplain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorizedI
users have different needs and preferences for the technology they use.IUse appropriate terminology in identifying and describing the function of common physical components of computing systems (hardware).IDescribe basic hardware and software problems using accurate terminology.INetworks and the InternetIExplain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorizedI
the technology they use.Image: Constraint of the sector of th
Use appropriate terminology in identifying and describing the function of common physical I components of computing systems (hardware). Describe basic hardware and software I problems using accurate terminology. Networks and the Internet Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized
describing the function of common physical components of computing systems (hardware). I Describe basic hardware and software problems using accurate terminology. I Networks and the Internet I Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized I
components of computing systems (hardware).Image: Components of computing systems (hardware).Describe basic hardware and software problems using accurate terminology.Image: Component systems (hardware).Networks and the InternetImage: Component systems (hardware).Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorizedImage: Component systems (hardware).
Describe basic hardware and software problems using accurate terminology. I Networks and the Internet I Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized I
problems using accurate terminology. I Networks and the Internet I Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized I
Networks and the Internet Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized
Explain what passwords are and why we use them, and use strong passwords to protect devices and information from unauthorized
them, and use strong passwords to protect devices and information from unauthorized
devices and information from unauthorized
Data and Analysis
Data and Analysis
Store, copy, search, retrieve, modify, and
delete information using a computing device I √ and define the information stored as data.
Collect and present the same data in various
visual formats.
Identify and describe patterns in data
visualizations, such as charts or graphs, to I \checkmark make predictions.
Algorithms and Programming
Model daily processes by creating and
following algorithms (sets of step-by-step I \checkmark
instructions) to complete tasks.
Model the way programs store and manipulate
data by using numbers or other symbols to
represent information.
Develop programs with sequences and simple
loops, to express ideas or address a problem.
Decompose (break down) the steps needed to
solve a problem into a precise sequence of $I $
instructions.
Develop plans that describe a program's
sequence of events, goals, and expected
outcomes.
Give attribution when using the ideas and
creations of others while developing programs.
Debug (identify and fix) errors in an algorithm
or program that includes sequences and simple I
loops.
Using correct terminology, describe steps
taken and choices made during the iterative I
process of program development.
Impacts of Computing
Compare how people live and work before and
after the implementation or adoption of new $ $ I $ $ \checkmark
after the implementation or adoption of new I 🗸
after the implementation or adoption of new computing technology.I✓Work respectfully and responsibly with others✓
after the implementation or adoption of new computing technology.I✓Work respectfully and responsibly with others online.I✓
after the implementation or adoption of new computing technology.I✓Work respectfully and responsibly with others✓

Grade 1			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	I	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	I	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	I	\checkmark	
Explore social and ethical impacts of technology	I	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	I	\checkmark	
ISTE Standards for Students			
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	I	\checkmark	
Computer Literacy			
Operate Basic Device Functionality			
Turn on the computer.	1	\checkmark	
Login and logoff the computer.	1	√	
Use a pointing device to click menus and icons.	I	\checkmark	
Open programs, web apps, and documents.	I	\checkmark	
Use buttons and media players.	I	\checkmark	
Hardware and Software			
Demonstrate an understanding of the relationship between hardware and software.	I		
Identify major computer components.	I		
Apply strategies for identifying and solving routine problems that occur during everyday computer use.	I	\checkmark	
Word Processing			
Write, edit, save, and print documents in one sitting.	I	\checkmark	
Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.	I	\checkmark	
Highlight, copy, and paste text.	I	\checkmark	
Copy, paste, insert, and resize images within the documents and from outside sources.	I	\checkmark	
Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).	I	\checkmark	
Spreadsheets			
Use mathematical symbols appropriately.	I	\checkmark	
Digital Media			
Watch videos and use play, pause, rewind and forward buttons.	I	\checkmark	

			1
Use painting/drawing tools and other	1	\checkmark	
applications to create and edit work.		v	
Research			
Use Internet browsers, search engines, and			
online directories, compare the differences,	I		
and explain how they disseminate information.			
Identify careers and industry opportunities.	I	\checkmark	
Perform basic searches on a database (e.g.,		,	
library card catalog) to locate information.	I	\checkmark	
Use content-specific technology tools to gather			
and analyze data.	I	\checkmark	
Identify and analyze the purpose of a media			
message (inform, persuade, entertain).	I	\checkmark	
Use Internet browsers to access information			
(e.g., enter a URL, access links, create	1	\checkmark	
bookmarks, print webpages).		v	
Communication and Collaboration			
Use a variety of age-appropriate technologies			
to communicate and exchange ideas.	- I	\checkmark	
Computational Thinking			
Create algorithms, or series of ordered steps,	1	\checkmark	
to solve problems.			
Decompose a problem into smaller, more	1	\checkmark	
manageable parts.			
Computer Science			
Computing Systems			
Select and operate appropriate software to			
perform a variety of tasks, and recognize that	R		
users have different needs and preferences for	n		
the technology they use.			
Use appropriate terminology in identifying and			
describing the function of common physical	R		
components of computing systems (hardware).			
Describe basic hardware and software			
problems using accurate terminology.	R		
Networks and the Internet			
Explain what passwords are and why we use			
them, and use strong passwords to protect			
devices and information from unauthorized	R		
access.			
Data and Analysis			
Store, copy, search, retrieve, modify, and			
delete information using a computing device	R	\checkmark	
and define the information stored as data.		•	
Collect and present the same data in various			
visual formats.	R	\checkmark	
Identify and describe patterns in data			
visualizations, such as charts or graphs, to	R	\checkmark	
make predictions.		ľ	
Algorithms and Programming			
Model daily processes by creating and			
following algorithms (sets of step-by-step	R	\checkmark	
instructions) to complete tasks.		•	
Model the way programs store and manipulate			
data by using numbers or other symbols to	R		
represent information.			
Develop programs with sequences and simple			
loops, to express ideas or address a problem.	R		
			. <u> </u>

Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.	R	\checkmark	
Develop plans that describe a program's sequence of events, goals, and expected outcomes.	R		
Give attribution when using the ideas and creations of others while developing programs.	R		
Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.	R		
Using correct terminology, describe steps taken and choices made during the iterative process of program development.	R		
Impacts of Computing			
Compare how people live and work before and after the implementation or adoption of new computing technology.	R	\checkmark	
Work respectfully and responsibly with others online.	R	\checkmark	
Keep login information private, and log off of devices appropriately.	R	\checkmark	

Grade 2			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	I	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	I	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	I		
Identify cyberbullying and describe strategies to deal with such a situation.	I	\checkmark	
Explore social and ethical impacts of technology	I	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	I	\checkmark	
Copyright			
Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	I	\checkmark	
ISTE Standards for Students			
Students cultivate and manage their digital identify and are aware of the permanence of their actions in the digital world.	I		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	I	~	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	I	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	I		
Computer Literacy			
Keyboarding			
Use proper posture and ergonomics.	I		
Locate and use letter and number keys with left and right hand placement.	I		
Locate and use correct finger/hand for spacebar, enter, and shift key.	I		
Gain proficiency and speed in keyboarding (type 5 WPM per grade level beginning at 2nd grade).	5 WPM		
File Management Organize files and folders.	1	1	
Manage files and save documents.		V	
Operate Basic Device Functionality	·	V	
Turn on the computer.	I	\checkmark	
Login and logoff the computer.	I	\checkmark	

Use a pointing device to click menus and icons.	I	\checkmark	
Open programs, web apps, and documents.	I	\checkmark	
Use buttons and media players.	1	\checkmark	
Hardware and Software	-	v	
Demonstrate an understanding of the			
relationship between hardware and software.	I		
Identify major computer components.	1		
Apply strategies for identifying and solving			
routine problems that occur during everyday	1	\checkmark	
computer use.		v	
Word Processing			
Write, edit, save, and print documents in one			
sitting.	I	\checkmark	
Use menu/toolbar functions, such as font size,			
font style, and line spacing to format a	1	\checkmark	
document.		v	
	1	/	
Highlight, copy, and paste text.		\checkmark	
Copy, paste, insert, and resize images within	I	\checkmark	
the documents and from outside sources.			
Proofread and edit writing using appropriate		,	
resources (spell checker, grammar checker,	I	\checkmark	
thesaurus).			
Spreadsheets			
Demonstrate an understanding of recording,	I.	\checkmark	
organizing, and graphing information.			
Identify and explain terms and concepts		,	
related to spreadsheets (e.g., cells, columns,	I	\checkmark	
rows, values, charts, graphs).			
Use mathematical symbols appropriately.		\checkmark	
Digital Media			
Watch videos and use play, pause, rewind and	R	\checkmark	
forward buttons.		,	
Use painting/drawing tools and other	1	\checkmark	
applications to create and edit work.	-	v	
Research			
Use Internet browsers, search engines, and			
online directories, compare the differences,	I		
and explain how they disseminate information.			
Identify careers and industry opportunities.	I	\checkmark	
Perform basic searches on a database (e.g.,	1	\checkmark	
library card catalog) to locate information.	'	v	
Use content-specific technology tools to gather	1	\checkmark	
and analyze data.		Ň	
Identify and analyze the purpose of a media	1	\checkmark	
message (inform, persuade, entertain).		v	
Use Internet browsers to access information			
(e.g., enter a URL, access links, create	I	\checkmark	
bookmarks, print webpages).			
Communication and Collaboration			
Collaborate using technology.	I	\checkmark	
Use a variety of age-appropriate technologies	I	\checkmark	
to communicate and exchange ideas.	1	~	
Create projects that use text, graphics, audio,	1	/	
and video to communicate ideas.	I	\checkmark	
Evaluate presentations for organization,			
content, design, and appropriateness of	1	\checkmark	
citation.			
Computational Thinking			

Create algorithms, or series of ordered steps,	I	\checkmark	
to solve problems.			
Decompose a problem into smaller, more manageable parts.	I	\checkmark	
Collect, analyze, and represent data effectively.		\checkmark	
		•	
Computer Science			
Computing Systems			
Select and operate appropriate software to			
perform a variety of tasks, and recognize that	М		
users have different needs and preferences for			
the technology they use. Use appropriate terminology in identifying and			
describing the function of common physical	м		
components of computing systems (hardware).	101		
Describe basic hardware and software			
problems using accurate terminology.	Μ		
Networks and the Internet			
Explain what passwords are and why we use			
them, and use strong passwords to protect			
devices and information from unauthorized	Μ		
access.			
Data and Analysis			
Store, copy, search, retrieve, modify, and			
delete information using a computing device	м	\checkmark	
and define the information stored as data.	111	v	
Collect and present the same data in various			
visual formats.	Μ	\checkmark	
Identify and describe patterns in data			
visualizations, such as charts or graphs, to	м	\checkmark	
make predictions.		v	
Algorithms and Programming			
Model daily processes by creating and			
following algorithms (sets of step-by-step	М	\checkmark	
instructions) to complete tasks.		·	
Model the way programs store and manipulate			
uata by using numbers of other symbols to	М		
data by using numbers or other symbols to represent information.	М		
represent information.			
	M M		
represent information. Develop programs with sequences and simple			
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem.		✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to	M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of	M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.	M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's	M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected	M M M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes.	M	~	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and	M M M	✓ 	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs.	M M M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops.	M M M M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps	M M M M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative	M M M M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative process of program development.	M M M M M	✓ 	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative process of program development. Impacts of Computing	M M M M M	✓ 	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative process of program development.	M M M M M	✓ 	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative process of program development. Impacts of Computing Compare how people live and work before and after the implementation or adoption of new	M M M M M	✓ ✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative process of program development. <i>Impacts of Computing</i> Compare how people live and work before and after the implementation or adoption of new computing technology.	M M M M M M	✓	
represent information. Develop programs with sequences and simple loops, to express ideas or address a problem. Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions. Develop plans that describe a program's sequence of events, goals, and expected outcomes. Give attribution when using the ideas and creations of others while developing programs. Debug (identify and fix) errors in an algorithm or program that includes sequences and simple loops. Using correct terminology, describe steps taken and choices made during the iterative process of program development. Impacts of Computing Compare how people live and work before and after the implementation or adoption of new	M M M M M M		

Keep login information private, and log off of	м	./	
devices appropriately.	141	v	

Crada 2			
Grade 3			
	I/M/		← Standard
Standard	R	\checkmark	may be
			integrated New
Digital Citizenship		=	concept
Responsible Use			
Demonstrate compliance of Responsible Use		,	
Policy and classroom rules regarding technology use and networks.	R	\checkmark	
Explain responsible uses of technology and			
digital information and describe potential	R	\checkmark	
consequences for inappropriate use.		-	
Identify and explain the strategies for the safe			
and efficient use of computers (passwords,	I.		
virus protection software, etc.).			
Demonstrate safe email practices and	I	\checkmark	
appropriate email etiquette.		_	
Identify cyberbullying and describe strategies	I	\checkmark	
to deal with such a situation. Explore social and ethical impacts of			
technology	R	\checkmark	
Recognize and describe the potential risks and			
dangers associated with online	R	\checkmark	
communication.		-	
Analyze and explain how media and data can			
be used to distort, exaggerate, and	I.	\checkmark	
misinterpret information.			
Copyright			
Explain fair use guidelines for copyrighted	I	\checkmark	
material (images, music, videos, etc.). ISTE Standards for Students			
Students cultivate and manage their digital			
identify and are aware of the permanence of	I		
their actions in the digital world.			
Students engage in positive, safe, legal, and			
ethical behavior when using technology	R	./	
including social interactions online or when		Ň	
using networked devices.			
Students demonstrate an understanding of and		,	
respect for the rights and obligations of using and sharing intellectual property.	I	\checkmark	
Students manage their personal data to			
maintain digital privacy and security and are			
aware of data-collection technology used to	I		
track their navigation online.			
Computer Literacy			
Keyboarding			
Use proper posture and ergonomics.	I		
Locate and use letter and number keys with	1		
left and right hand placement.			
Locate and use correct finger/hand for			
spacebar, enter, and shift key.	· · ·		
Gain proficiency and speed in keyboarding	10		
(type 5 WPM per grade level beginning at 2nd grade).	WPM		
File Management			

Organize files and folders.	I	\checkmark	
Manage files and save documents.	1	\checkmark	
Operate Basic Device Functionality			
Turn on the computer.	R	\checkmark	
Login and logoff the computer.	R	\checkmark	
Use a pointing device to click menus and icons.	R	\checkmark	
Open programs, web apps, and documents.	R	√	
Use buttons and media players.	R	v √	
Hardware and Software	N	v	
Demonstrate an understanding of the			
relationship between hardware and software.	R		
Identify major computer components.	R		
Describe the major components and functions			
of computers and networks.	1		
Apply strategies for identifying and solving			
routine problems that occur during everyday	R	\checkmark	
computer use.		v	
Word Processing			
Write, edit, save, and print documents in one	_		
sitting.	R	\checkmark	
Use menu/toolbar functions, such as font size,			
font style, and line spacing to format a	R	\checkmark	
document.			
Highlight, copy, and paste text.	R	\checkmark	
Copy, paste, insert, and resize images within			
	R	\checkmark	
the documents and from outside sources.	R	\checkmark	
	R R	√ √	
the documents and from outside sources. Proofread and edit writing using appropriate			
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker,			
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).	R	√	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets			
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording,	R	√	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information.	R	√	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts	R	√	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns,	R	√	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs).	R	✓ ✓ ✓	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately.	R	✓ ✓ ✓	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools	R I I R	✓ ✓ ✓ ✓	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text.	R I I R	✓ ✓ ✓	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to	R I I R I I		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data.	R I I R	✓ ✓ ✓ ✓	
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within	R I I R I I		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources.	R I I R I I I		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media	R I I R I I		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other	R I I I I I R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons.	R I I R I I I		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other	R I I I I I R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and	R I I I I I R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences,	R I I I I I R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information.	R I I R I I R R R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information. Identify careers and industry opportunities.	R I I R I I R R R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information. Identify careers and industry opportunities. Perform basic searches on a database (e.g.,	R I I R I R R R R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information. Identify careers and industry opportunities. Perform basic searches on a database (e.g., library card catalog) to locate information.	R I I R I I R R R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information. Identify careers and industry opportunities. Perform basic searches on a database (e.g., library card catalog) to locate information.	R I I R I I R R R R R I R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information. Identify careers and industry opportunities. Perform basic searches on a database (e.g., library card catalog) to locate information. Use content-specific technology tools to gather and analyze data.	R I I R I R R R R		
the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Spreadsheets Demonstrate an understanding of recording, organizing, and graphing information. Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). Use mathematical symbols appropriately. Presentation Tools Create, edit, and format text. Create a series of slides and organize them to present research or convey data. Copy, paste, insert, and resize images within the slides and from outside sources. Digital Media Watch videos and use play, pause, rewind and forward buttons. Use painting/drawing tools and other applications to create and edit work. Research Use Internet browsers, search engines, and online directories, compare the differences, and explain how they disseminate information. Identify careers and industry opportunities. Perform basic searches on a database (e.g., library card catalog) to locate information.	R I I R I I R R R R R I R		

Identify and explain current hardware and software trends.	I	\checkmark	
Use Internet browsers to access information	D		
(e.g., enter a URL, access links, create bookmarks, print webpages).	R	\checkmark	
Communication and Collaboration			
	D		
Collaborate using technology.	R	\checkmark	
Use a variety of age-appropriate technologies to communicate and exchange ideas.	R	\checkmark	
Create projects that use text, graphics, audio, and video to communicate ideas.	R	\checkmark	
Evaluate presentations for organization,		,	
content, design, and appropriateness of citation.	I	\checkmark	
Computational Thinking			
Create algorithms, or series of ordered steps, to solve problems.	R	\checkmark	
Decompose a problem into smaller, more	R	\checkmark	
manageable parts.		,	
Collect, analyze, and represent data effectively.	I	\checkmark	
Demonstrate an understanding of how			
information is represented, stored, and processed by a computer.	I	\checkmark	
Computer Science			
Computing Systems			
Describe how internal and external parts of	1		
computing devices function to form a system.			
Model how computer hardware and software	1		
work together as a system to accomplish tasks.			
Determine potential solutions to solve simple	1		
hardware and software problems using common troubleshooting strategies.	1		
Networks and the Internet			
Model how information is broken down into			
smaller pieces, transmitted as packets through			
multiple devices over networks and the	I		
Internet, and reassembled at the destination.			
Discuss real-world cybersecurity problems and			
how personal information can be protected.	I		
Data and Analysis			
Organize and present collected data visually to highlight relationships and support a claim	I	\checkmark	
Use data to highlight or propose cause-and-			
effect relationships, predict outcomes, or	I	\checkmark	
communicate an idea.			
Algorithms and Programming			
Compare and refine multiple algorithms for the		,	
same task and determine which is the most appropriate.	I	\checkmark	
Create programs that use variables to store			
and modify data.	I		
Create programs that include sequences,			
events, loops, and conditionals.			
Decompose (break down) problems into			
smaller, more manageable subproblems to	I.	\checkmark	
facilitate the program development process.			
Modify, remix, or incorporate portions of an existing program into one's own work, to	I		

features.Image: Set of the se	develop something new or add more advanced			
Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.IObserve intellectual property rights and give appropriate attribution when creating or remixing programs.ITest and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.ITake on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of Computing Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI				
development of a program by including others' perspectives and considering user preferences.IObserve intellectual property rights and give appropriate attribution when creating or remixing programs.ITest and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.ITake on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of Computing Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingIVI				
perspectives and considering user preferences.Image: Considering user preferences.Observe intellectual property rights and give appropriate attribution when creating or remixing programs.Image: Considering user preferences.Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.Image: Considering user preferences.Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.Image: Considering user preferences.Describe choices made during program development using code comments, presentations, and demonstrations.Image: Considering user preferences.Impacts of Computing Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.Image: Considering user preferences.Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.Image: Considering user presentional artifacts.Use public domain or creative commons media, and refrain from copying or usingImage: Considering using	· ·			
Observe intellectual property rights and give appropriate attribution when creating or remixing programs. I Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. I Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development. I Describe choices made during program development using code comments, presentations, and demonstrations. I Impacts of Computing Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices. I Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users. I Seek diverse perspectives for the purpose of improving computational artifacts. I Use public domain or creative commons media, and refrain from copying or using I		1		
appropriate attribution when creating or remixing programs.ITest and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.ITake on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of Computing Locuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI				
remixing programs.ITest and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.ITake on varying roles, with teacher guidance, when collaborating with peers during the 	1 1 7 6 6			
Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.ITake on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of ComputingIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI✓		1		
program or algorithm to ensure it runs as intended.IITake on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.IIDescribe choices made during program development using code comments, presentations, and demonstrations.IIImpacts of ComputingIIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.I✓Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.IISeek diverse perspectives for the purpose of improving computational artifacts.I✓Use public domain or creative commons media, and refrain from copying or usingI✓				
intended.ITake on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of ComputingIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI				
when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of ComputingIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI		I		
when collaborating with peers during the design, implementation, and review stages of program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of ComputingIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI	Take on varying roles, with teacher guidance,			
program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of ComputingIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI	when collaborating with peers during the			
program development.IDescribe choices made during program development using code comments, presentations, and demonstrations.IImpacts of ComputingIDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI	design, implementation, and review stages of	I		
Describe choices made during program I development using code comments, I presentations, and demonstrations. Impacts of Computing Discuss computing technologies that have I changed the world, and express how those I technologies influence, and are influenced by, I cultural practices. I Brainstorm ways to improve the accessibility I and usability of technology products for the I diverse needs and wants of users. I Seek diverse perspectives for the purpose of I improving computational artifacts. I Use public domain or creative commons I media, and refrain from copying or using I				
presentations, and demonstrations.Impacts of ComputingDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.I✓Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.I✓Seek diverse perspectives for the purpose of improving computational artifacts.II✓Use public domain or creative commons media, and refrain from copying or usingI✓				
Impacts of ComputingDiscuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.I✓Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.I✓Seek diverse perspectives for the purpose of improving computational artifacts.I✓Use public domain or creative commons media, and refrain from copying or usingI✓	development using code comments,	1		
Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices. Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users. Seek diverse perspectives for the purpose of improving computational artifacts. Use public domain or creative commons media, and refrain from copying or using I ✓	1 0			
Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices. Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users. Seek diverse perspectives for the purpose of improving computational artifacts. Use public domain or creative commons media, and refrain from copying or using I ✓	Impacts of Computing			
technologies influence, and are influenced by, cultural practices.I✓Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.IISeek diverse perspectives for the purpose of improving computational artifacts.IIUse public domain or creative commons media, and refrain from copying or usingI✓				
technologies influence, and are influenced by, cultural practices.I✓Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.IISeek diverse perspectives for the purpose of improving computational artifacts.IIUse public domain or creative commons media, and refrain from copying or usingI✓	changed the world, and express how those			
cultural practices.IBrainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.ISeek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI✓	o , 1	I	\checkmark	
and usability of technology products for the diverse needs and wants of users.IISeek diverse perspectives for the purpose of improving computational artifacts.IIUse public domain or creative commons media, and refrain from copying or usingI✓				
and usability of technology products for the diverse needs and wants of users.IISeek diverse perspectives for the purpose of improving computational artifacts.IIUse public domain or creative commons media, and refrain from copying or usingI✓	Brainstorm ways to improve the accessibility			
Seek diverse perspectives for the purpose of improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI✓	, , , ,	1		
improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI√	diverse needs and wants of users.			
improving computational artifacts.IUse public domain or creative commons media, and refrain from copying or usingI√	Seek diverse perspectives for the purpose of			
media, and refrain from copying or using I \checkmark	improving computational artifacts.	I		
	Use public domain or creative commons			
material created by others without permission	media, and refrain from copying or using	I	\checkmark	
indicital of cated by others without permission.	material created by others without permission.			

Grade 4			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	R	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	R	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	R		
Demonstrate safe email practices and appropriate email etiquette.	I	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	R	\checkmark	
Explore social and ethical impacts of technology	R	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	R	\checkmark	
Give examples of hardware and software that enable people with disabilities to use technology.	I	\checkmark	
Analyze and explain how media and data can be used to distort, exaggerate, and misinterpret information.	I	~	
Explain the potential risks associated with the use of networked digital environments (Internet, cell phones, wireless networks) and sharing personal information.	I		
Copyright Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	R	\checkmark	
ISTE Standards for Students			
Students cultivate and manage their digital identify and are aware of the permanence of their actions in the digital world.	I		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	R	\checkmark	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	I	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	I		
Computer Literacy			
Keyboarding Use proper posture and ergonomics.			

Locate and use letter and number keys with	I		
left and right hand placement.			
Locate and use correct finger/hand for spacebar, enter, and shift key.	I		
Gain proficiency and speed in keyboarding	45		
(type 5 WPM per grade level beginning at 2nd	15 WPM		
grade).	VVPIVI		
File Management			
Organize files and folders.	R	\checkmark	
Manage files and save documents.	R	\checkmark	
Operate Basic Device Functionality			
Turn on the computer.	R	\checkmark	
Login and logoff the computer.	R	\checkmark	
Use a pointing device to click menus and icons.	R	\checkmark	
Open programs, web apps, and documents.	R	\checkmark	
Use buttons and media players.	R	\checkmark	
Hardware and Software			
Demonstrate an understanding of the			
relationship between hardware and software.	R		
Identify major computer components.	R		
Describe the major components and functions	1		
of computers and networks.	1		
Apply strategies for identifying and solving			
routine problems that occur during everyday	R	\checkmark	
computer use.			
Word Processing			
Write, edit, save, and print documents in one	R	\checkmark	
sitting. Use menu/toolbar functions, such as font size,			
font style, and line spacing to format a	R	\checkmark	
document.	, it	v	
Highlight, copy, and paste text.	R	\checkmark	
Copy, paste, insert, and resize images within	Р	/	
the documents and from outside sources.	R	\checkmark	
Proofread and edit writing using appropriate			
resources (spell checker, grammar checker,	R	\checkmark	
thesaurus).			
Spreadsheets			
Demonstrate an understanding of recording,	R	\checkmark	
organizing, and graphing information.		•	
Identify and explain terms and concepts	_	,	
related to spreadsheets (e.g., cells, columns,	R	\checkmark	
rows, values, charts, graphs).		/	
Use mathematical symbols appropriately.	R	\checkmark	
Presentation Tools	1	1	
Create, edit, and format text.		\checkmark	
Create a series of slides and organize them to present research or convey data.	I.	\checkmark	
Copy, paste, insert, and resize images within			
the slides and from outside sources.	I	\checkmark	
Digital Media			
Watch videos and use play, pause, rewind and			
forward buttons.	М	\checkmark	
Watch videos and use play, pause, rewind, and	,	,	
forward buttons while taking notes.	I	\checkmark	
Use painting/drawing tools and other	R	\checkmark	
applications to create and edit work.	N	v	

Use data to highlight or propose cause-and- effect relationships, predict outcomes, or	R	\checkmark	
communicate an idea.			
Algorithms and Programming			
Compare and refine multiple algorithms for the			
same task and determine which is the most	R	\checkmark	
appropriate.	_		
Create programs that use variables to store	R		
and modify data.			
Create programs that include sequences,	R		
events, loops, and conditionals.			
Decompose (break down) problems into	R	\checkmark	
smaller, more manageable subproblems to facilitate the program development process.	n	V	
Modify, remix, or incorporate portions of an			
existing program into one's own work, to			
develop something new or add more advanced	R		
features.			
Use an iterative process to plan the			
development of a program by including others'	R		
perspectives and considering user preferences.			
Observe intellectual property rights and give			
appropriate attribution when creating or	R		
remixing programs.			
Test and debug (identify and fix errors) a			
program or algorithm to ensure it runs as	R		
intended.			
Take on varying roles, with teacher guidance,			
when collaborating with peers during the	R		
design, implementation, and review stages of			
program development.			
Describe choices made during program development using code comments,	R		
presentations, and demonstrations.	n		
Impacts of Computing			
Discuss computing technologies that have			
changed the world, and express how those	_	,	
technologies influence, and are influenced by,	R	\checkmark	
cultural practices.			
Brainstorm ways to improve the accessibility			
and usability of technology products for the	R		
diverse needs and wants of users.			
Seek diverse perspectives for the purpose of	R		
improving computational artifacts.			
Use public domain or creative commons	5	,	
media, and refrain from copying or using	R	\checkmark	
material created by others without permission.			

Grade 5			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	R	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	R	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	R		
Demonstrate safe email practices and appropriate email etiquette.	R	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	R	\checkmark	
Explore social and ethical impacts of technology	М	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	М	\checkmark	
Give examples of hardware and software that enable people with disabilities to use technology.	I	\checkmark	
Analyze and explain how media and data can be used to distort, exaggerate, and misinterpret information.	R	\checkmark	
Explain the potential risks associated with the use of networked digital environments (Internet, cell phones, wireless networks) and sharing personal information.	I		
Copyright Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	R	\checkmark	
ISTE Standards for Students			
Students cultivate and manage their digital identify and are aware of the permanence of their actions in the digital world.	R		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	R	\checkmark	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	R	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	R		
Computer Literacy			
Keyboarding Use proper posture and ergonomics.	R		
	N	I	

Locate and use letter and number keys with left and right hand placement. R Locate and use correct finger/hand for spacebar, enter, and shift key. R Gain proficiency and speed in keyboarding (type 5 WPM per grade level beginning at 2nd grade). 20 WPM File Management ✓ Organize files and folders. R ✓ Manage files and save documents. R ✓
Locate and use correct finger/hand for spacebar, enter, and shift key.RGain proficiency and speed in keyboarding (type 5 WPM per grade level beginning at 2nd grade).20 WPMFile ManagementOrganize files and folders.RManage files and save documents.R
Gain proficiency and speed in keyboarding (type 5 WPM per grade level beginning at 2nd grade).20 WPMFile ManagementVOrganize files and folders.R✓Manage files and save documents.R✓
(type 5 WPM per grade level beginning at 2nd grade).2U WPMFile Management✓Organize files and folders.R✓Manage files and save documents.R✓
grade).WPMFile Management✓Organize files and folders.RManage files and save documents.R
File Management R ✓ Organize files and folders. R ✓ Manage files and save documents. R ✓
Organize files and folders.R✓Manage files and save documents.R✓
Manage files and save documents. R 🗸
Turn on the computer. M \checkmark
Login and logoff the computer. M \checkmark
Use a pointing device to click menus and icons. M \checkmark
Open programs, web apps, and documents. M √
Use buttons and media players. M \checkmark
Hardware and Software
Demonstrate an understanding of the
relationship between hardware and software.
Troubleshoot basic hardware and software
problems. $ \downarrow \checkmark$
Identify major computer components.
Describe the major components and functions
Describe the major components and functions
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everydayR
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing Write, edit, save, and print documents in oneM✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing Write, edit, save, and print documents in one sitting.M✓
Describe the major components and functions of computers and networks.RRApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingV✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size,✓
Describe the major components and functions of computers and networks.RRApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingV✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format aM✓
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.RWord Processing✓Write, edit, save, and print documents in one sitting.MUse menu/toolbar functions, such as font size, font style, and line spacing to format a document.M
Describe the major components and functions of computers and networks. R R Apply strategies for identifying and solving routine problems that occur during everyday computer use. R ✓ Word Processing Write, edit, save, and print documents in one sitting. M ✓ Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. M ✓ Highlight, copy, and paste text. M ✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing✓✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing✓✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word Processing✓✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker,M✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingWrite, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs,I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingWrite, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers,I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingWrite, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingWrite, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns,I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearanceII
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingWrite, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.II
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.I✓SpreadsheetsEnter and edit data and perform calculationsII
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.I✓SpreadsheetsI✓
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.I✓SpreadsheetsEnter and edit data and perform calculations using formulas.I✓Demonstrate an understanding of recording.I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.I✓SpreadsheetsI✓Enter and edit data and perform calculations using formulas.I✓
Describe the major components and functions of computers and networks.RIApply strategies for identifying and solving routine problems that occur during everyday computer use.R✓Word ProcessingM✓Write, edit, save, and print documents in one sitting.M✓Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.M✓Highlight, copy, and paste text.M✓Copy, paste, insert, and resize images within the documents and from outside sources.M✓Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).M✓Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).I✓Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.I✓SpreadSheetsI✓Enter and edit data and perform calculations using formulas.I✓Demonstrate an understanding of recording, organizing, and graphing information.R✓
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.RWord ProcessingKWrite, edit, save, and print documents in one sitting.MUse menu/toolbar functions, such as font size, font style, and line spacing to format a document.MHighlight, copy, and paste text.MCopy, paste, insert, and resize images within the documents and from outside sources.MProofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).MDemonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).IApply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.ISpreadsheetsI✓Enter and edit data and perform calculations using formulas.IDemonstrate an understanding of recording, organizing, and graphing information.RIdentify and explain terms and concepts related to spreadsheets (e.g., cells, columns, related to spreadsheets (e.g., cells, columns, R
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.RWord ProcessingKWrite, edit, save, and print documents in one sitting.MUse menu/toolbar functions, such as font size, font style, and line spacing to format a document.MHighlight, copy, and paste text.MCopy, paste, insert, and resize images within the documents and from outside sources.MProofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).MDemonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).IApply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.ISpreadsheetsI✓Enter and edit data and perform calculations using formulas.IDemonstrate an understanding of recording, organizing, and graphing information.RIdentify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs).R
Describe the major components and functions of computers and networks. R Apply strategies for identifying and solving routine problems that occur during everyday computer use. R ✓ Word Processing M ✓ Write, edit, save, and print documents in one sitting. M ✓ Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. M ✓ Highlight, copy, and paste text. M ✓ ✓ Copy, paste, insert, and resize images within the documents and from outside sources. M ✓ Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). M ✓ Demonstrate the use of intermediate featuress in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). I ✓ Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. I ✓ Spreadsheets I ✓ ✓ I ✓ Demonstrate an understanding of recording, organizing, and graphing information. R ✓ I ✓ Identify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs). R
Describe the major components and functions of computers and networks.RApply strategies for identifying and solving routine problems that occur during everyday computer use.RWord ProcessingKWrite, edit, save, and print documents in one sitting.MUse menu/toolbar functions, such as font size, font style, and line spacing to format a document.MHighlight, copy, and paste text.MCopy, paste, insert, and resize images within the documents and from outside sources.MProofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).MDemonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).IApply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.ISpreadsheetsI✓Enter and edit data and perform calculations using formulas.IDemonstrate an understanding of recording, organizing, and graphing information.RIdentify and explain terms and concepts related to spreadsheets (e.g., cells, columns, rows, values, charts, graphs).R

Use spreadsheets to calculate, graph, organize,			
and present data in a variety of real world	I	\checkmark	
settings.			
Enter formulas and functions in spreadsheet		\checkmark	
applications.		v	
Use and modify spreadsheets to analyze data			
and propose solutions.	I		
Use the functions and tools of a spreadsheet			
application (e.g., autofill, sort, filter, find).	I		
Presentation Tools			
Create, edit, and format text.	R	\checkmark	
Create a series of slides and organize them to		v	
-	R	\checkmark	
present research or convey data.			
Copy, paste, insert, and resize images within	R	\checkmark	
the slides and from outside sources.			
Create presentations for a variety of audiences		,	
and purposes with the use of appropriate	I	\checkmark	
transitions and animations to add interest.			
Digital Media			
Watch videos and use play, pause, rewind and	м	\checkmark	
forward buttons.	101	v	
Watch videos and use play, pause, rewind, and		\checkmark	
forward buttons while taking notes.	I	V	
Use painting/drawing tools and other	D		
applications to create and edit work.	R	\checkmark	
Create media for a variety of audiences and			
purposes with the use of appropriate	1	\checkmark	
transitions and animations to add interest.			
Independently use appropriate technology			
tools (graphic organizers, audio, and video) to	1	\checkmark	
define problems and propose hypotheses.	•	v	
Research			
Use Internet browsers, search engines, and	54		
online directories, compare the differences,	М		
and explain how they disseminate information.		,	
Identify careers and industry opportunities.	R	\checkmark	
Perform basic searches on a database (e.g.,	м	\checkmark	
library card catalog) to locate information.		•	
Use content-specific technology tools to gather	R	./	
and analyze data.	, N	v	
Identify and analyze the purpose of a media	м	\checkmark	
message (inform, persuade, entertain).	171	V	
Identify and explain current hardware and	-	,	
software trends.	R	\checkmark	
Use Internet browsers to access information			
(e.g., enter a URL, access links, create	М	\checkmark	
bookmarks, print webpages).			
Communication and Collaboration			
Collaborate using technology.	М	./	
	141	v	
Use a variety of age-appropriate technologies	М	\checkmark	
to communicate and exchange ideas.			
Create projects that use text, graphics, audio,	М	\checkmark	
and video to communicate ideas.		-	
Evaluate presentations for organization,			
content, design, and appropriateness of	R	\checkmark	
citation.			
Computational Thinking			
Create algorithms, or series of ordered steps,	R	/	
to solve problems.	ĸ	\checkmark	

		<u> </u>	
Decompose a problem into smaller, more manageable parts.	М	\checkmark	
Collect, analyze, and represent data effectively.	R	\checkmark	
Demonstrate an understanding of how	IX.	~	
information is represented, stored, and	1	\checkmark	
processed by a computer.	-	1	
Optimize an algorithm for execution by a			
computer.	I		
Computer Science			
Computing Systems			
Describe how internal and external parts of			
computing devices function to form a system.	М		
Model how computer hardware and software	М		
work together as a system to accomplish tasks.	IVI		
Determine potential solutions to solve simple			
hardware and software problems using	Μ		
common troubleshooting strategies.			
Networks and the Internet			
Model how information is broken down into smaller pieces, transmitted as packets through			
multiple devices over networks and the	М		
Internet, and reassembled at the destination.			
Discuss real-world cybersecurity problems and			
how personal information can be protected.	Μ		
Data and Analysis			
Organize and present collected data visually to	М	\checkmark	
highlight relationships and support a claim	IVI	~	
Use data to highlight or propose cause-and-		Ι.	
effect relationships, predict outcomes, or	M		
a successive and the second		l v	
communicate an idea.		V	
Algorithms and Programming		v	
Algorithms and Programming Compare and refine multiple algorithms for the			
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most	M	 ✓ 	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate.	М		
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most			
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store	M		
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals.	М		
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to	M		
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process.	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced	M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the	M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give	M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or	M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or remixing programs.	M M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or remixing programs. Test and debug (identify and fix errors) a	M M M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or remixing programs. Test and debug (identify and fix errors) a program or algorithm to ensure it runs as	M M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or remixing programs. Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.	M M M M M M	√	
Algorithms and ProgrammingCompare and refine multiple algorithms for the same task and determine which is the most appropriate.Create programs that use variables to store and modify data.Create programs that include sequences, events, loops, and conditionals.Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process.Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.Observe intellectual property rights and give appropriate attribution when creating or remixing programs.Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.Take on varying roles, with teacher guidance,	M M M M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or remixing programs. Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.	M M M M M M	√	
Algorithms and Programming Compare and refine multiple algorithms for the same task and determine which is the most appropriate. Create programs that use variables to store and modify data. Create programs that include sequences, events, loops, and conditionals. Decompose (break down) problems into smaller, more manageable subproblems to facilitate the program development process. Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features. Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences. Observe intellectual property rights and give appropriate attribution when creating or remixing programs. Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended. Take on varying roles, with teacher guidance, when collaborating with peers during the	M M M M M M M	√	

Describe choices made during program development using code comments, presentations, and demonstrations.	М		
Impacts of Computing			
Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.	Μ	\checkmark	
Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.	М		
Seek diverse perspectives for the purpose of improving computational artifacts.	Μ		
Use public domain or creative commons media, and refrain from copying or using material created by others without permission.	Μ	\checkmark	

Grade 6			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	R	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	R	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	R		
Demonstrate safe email practices and appropriate email etiquette.	R	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	М	\checkmark	
Explore social and ethical impacts of technology	М	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	М	\checkmark	
Give examples of hardware and software that enable people with disabilities to use technology.	R	\checkmark	
Analyze and explain how media and data can be used to distort, exaggerate, and misinterpret information.	R	\checkmark	
Explain the potential risks associated with the use of networked digital environments (Internet, cell phones, wireless networks) and sharing personal information.	R		
Copyright Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	R	\checkmark	
ISTE Standards for Students Students cultivate and manage their digital identify and are aware of the permanence of their actions in the digital world.	R		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	R	\checkmark	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	R	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	R		
Computer Literacy			
Keyboarding Use proper posture and ergonomics.	R		

Locate and use letter and number keys with	R		
left and right hand placement.	-		
Locate and use correct finger/hand for spacebar, enter, and shift key.	R		
Gain proficiency and speed in keyboarding			
(type 5 WPM per grade level beginning at 2nd	25		
grade).	WPM		
File Management			
Organize files and folders.	М	\checkmark	
Manage files and save documents.	М	\checkmark	
Operate Basic Device Functionality			
Turn on the computer.	М	\checkmark	
Login and logoff the computer.	М	\checkmark	
Use a pointing device to click menus and icons.	М	\checkmark	
Open programs, web apps, and documents.	М	\checkmark	
Use buttons and media players.	М	\checkmark	
Hardware and Software			
Demonstrate an understanding of the	м		
relationship between hardware and software.	IVI		
Troubleshoot basic hardware and software	1	\checkmark	
problems.		v	
Identify major computer components.	R		
Describe the major components and functions	R		
of computers and networks. Apply strategies for identifying and solving			
routine problems that occur during everyday	R	\checkmark	
computer use.		v	
Word Processing			
Write, edit, save, and print documents in one	М	\checkmark	
	М	\checkmark	
Write, edit, save, and print documents in one sitting.	M	√ √	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size,		-	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a		-	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within	M	✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources.	м	√	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker,	M	✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features	M M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs,	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features	M M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers,	M M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns,	M M M I	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance	M M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.	M M M I	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer	M M M I	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.	M M M I		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for	M M M I		
 Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. 	M M M I I		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.Spreadsheets	M M M I I I		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations	M M M I I		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.Spreadsheets	M M M I I I I I		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations using formulas.	M M M I I I		

	1		
Identify and explain terms and concepts			
related to spreadsheets (e.g., cells, columns,	R	\checkmark	
rows, values, charts, graphs).			
Use mathematical symbols appropriately.	М	\checkmark	
Use spreadsheets to make predictions, solve			
problems, and draw conclusions.	I		
Use spreadsheets to calculate, graph, organize,			
and present data in a variety of real world	1	\checkmark	
		v	
settings.			
Enter formulas and functions in spreadsheet	I	\checkmark	
applications.			
Use and modify spreadsheets to analyze data	1		
and propose solutions.	•		
Use the functions and tools of a spreadsheet	1		
application (e.g., autofill, sort, filter, find).	•		
Presentation Tools			
Create, edit, and format text.	R	\checkmark	
Create a series of slides and organize them to		-	
present research or convey data.	R	\checkmark	
Copy, paste, insert, and resize images within			
the slides and from outside sources.	R	\checkmark	
Create presentations for a variety of audiences		,	
and purposes with the use of appropriate	I	\checkmark	
transitions and animations to add interest.			
Digital Media			
Watch videos and use play, pause, rewind and	м	\checkmark	
forward buttons.		v	
Watch videos and use play, pause, rewind, and	R	/	
forward buttons while taking notes.	n	√	
Use painting/drawing tools and other			
applications to create and edit work.	М	\checkmark	
Create media for a variety of audiences and			
purposes with the use of appropriate	R	\checkmark	
transitions and animations to add interest.		ľ	
Independently use appropriate technology	_		
tools (graphic organizers, audio, and video) to	1	\checkmark	
	1	~	
define problems and propose hypotheses.			
Research			
Use Internet browsers, search engines, and			
online directories, compare the differences,	М		
and explain how they disseminate information.			
Identify careers and industry opportunities.	R	\checkmark	
Perform basic searches on a database (e.g.,	М	\checkmark	
library card catalog) to locate information.	141	V	
Use content-specific technology tools to gather	-	,	
and analyze data.	R	\checkmark	
Identify and analyze the purpose of a media			
		\checkmark	
	М		
message (inform, persuade, entertain).	IVI		
message (inform, persuade, entertain). Identify and explain current hardware and	R	\checkmark	
message (inform, persuade, entertain). Identify and explain current hardware and software trends.		\checkmark	
message (inform, persuade, entertain). Identify and explain current hardware and software trends. Use Internet browsers to access information	R		
message (inform, persuade, entertain). Identify and explain current hardware and software trends. Use Internet browsers to access information (e.g., enter a URL, access links, create		√ √	
message (inform, persuade, entertain). Identify and explain current hardware and software trends. Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages).	R		
message (inform, persuade, entertain). Identify and explain current hardware and software trends. Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages). Communication and Collaboration	R	√	
message (inform, persuade, entertain). Identify and explain current hardware and software trends. Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages). Communication and Collaboration Collaborate using technology.	R		
message (inform, persuade, entertain).Identify and explain current hardware and software trends.Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages).Communication and Collaboration Collaborate using technology.Use a variety of age-appropriate technologies	R M M	✓ ✓	
message (inform, persuade, entertain).Identify and explain current hardware and software trends.Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages).Communication and Collaboration Collaborate using technology.	R	√	
message (inform, persuade, entertain).Identify and explain current hardware and software trends.Use Internet browsers to access information (e.g., enter a URL, access links, create bookmarks, print webpages).Communication and Collaboration Collaborate using technology.Use a variety of age-appropriate technologies	R M M	✓ ✓	

		-	
Evaluate presentations for organization, content, design, and appropriateness of	R	\checkmark	
citation.		,	
Plan and implement a collaborative project			
with other students using technology tools (e.g., email, discussion forums, video	I.	\checkmark	
conference).			
Computational Thinking			
Create algorithms, or series of ordered steps, to solve problems.	М	\checkmark	
Decompose a problem into smaller, more			
manageable parts.	М	\checkmark	
Collect, analyze, and represent data effectively.	R	\checkmark	
Demonstrate an understanding of how	Р	,	
information is represented, stored, and processed by a computer.	R	\checkmark	
Optimize an algorithm for execution by a			
computer.	I		
Create simulations/models to understand	1	\checkmark	
natural phenomena and test hypotheses.		•	
Computer Science			
Computing Systems Recommend improvements to the design of			
computing devices, based on an analysis of	I		
how users interact with the devices.			
Design projects that combine hardware and			
software components to collect and exchange data.	I		
Systematically identify and fix problems with			
computing devices and their components.	I		
Networks and the Internet			
Model the role of protocols in transmitting	1		
data across networks and the Internet. Explain how physical and digital security			
measures protect electronic information.	I		
Apply multiple methods of encryption to			
model the secure transmission of information.	I		
Data and Analysis			
Represent data using multiple encoding schemes.	I.		
Collect data using computational tools and			
transform the data to make it more useful and	1		
reliable.			
Refine computational models based on the	1		
Refine computational models based on the data they have generated.	I		
Refine computational models based on the data they have generated. Algorithms and Programming			
Refine computational models based on the data they have generated.	I		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent	I		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on			
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values.	I		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values. Design and iteratively develop programs that	I		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values.	1		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values. Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. Decompose problems and subproblems into	1		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values. Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. Decompose problems and subproblems into parts to facilitate the design, implementation,	1		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values. Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.	 		
Refine computational models based on the data they have generated. Algorithms and Programming Use flowcharts and/or pseudocode to address complex problems as algorithms. Create clearly named variables that represent different data types and perform operations on their values. Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals. Decompose problems and subproblems into parts to facilitate the design, implementation,	1		

Seek and incorporate feedback from team members and users to refine a solution that meets user needs.	I		
Incorporate existing code, media, and libraries into original programs, and give attribution.	I		
Systematically test and refine programs using a range of test cases.	I		
Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts.	I		
Document programs in order to make them easier to follow, test, and debug.	Ι		
Impacts of Computing			
Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options.	Ι		
Discuss issues of bias and accessibility in the design of existing technologies.	I		
Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact.	I		
Describe tradeoffs between allowing information to be public and keeping information private and secure.	I	\checkmark	

Grade 7			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	Μ	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	М	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	М		
Demonstrate safe email practices and appropriate email etiquette.	М	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	М	\checkmark	
Explore social and ethical impacts of technology	М	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	М	\checkmark	
Give examples of hardware and software that enable people with disabilities to use technology.	R	\checkmark	
Analyze and explain how media and data can be used to distort, exaggerate, and misinterpret information.	R	\checkmark	
Explain the potential risks associated with the use of networked digital environments (Internet, cell phones, wireless networks) and sharing personal information.	R		
Copyright Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	Μ	\checkmark	
ISTE Standards for Students Students cultivate and manage their digital identify and are aware of the permanence of their actions in the digital world.	М		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	Μ	\checkmark	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	М	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	Μ		
Computer Literacy			
Keyboarding Use proper posture and ergonomics.	R		

Locate and use letter and number keys with	R		
left and right hand placement.			
Locate and use correct finger/hand for spacebar, enter, and shift key.	R		
Gain proficiency and speed in keyboarding	30		
(type 5 WPM per grade level beginning at 2nd	WPM		
grade).			
File Management			
Organize files and folders.	M	\checkmark	
Manage files and save documents.	М	\checkmark	
Operate Basic Device Functionality	NA	/	
Turn on the computer.	M	\checkmark	
Login and logoff the computer.	M	\checkmark	
Use a pointing device to click menus and icons.	M	\checkmark	
Open programs, web apps, and documents.	M	\checkmark	
Use buttons and media players.	M	\checkmark	
Hardware and Software			
Demonstrate an understanding of the relationship between hardware and software.	М		
Troubleshoot basic hardware and software	R	\checkmark	
problems.			
Identify major computer components. Describe the major components and functions	R		
of computers and networks.	R		
Apply strategies for identifying and solving			
routine problems that occur during everyday	R	\checkmark	
computer use.			
Word Processing			
Write, edit, save, and print documents in one sitting.	М	\checkmark	
· · · ·	М	\checkmark	
sitting.	M	√ √	
sitting. Use menu/toolbar functions, such as font size,			
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text.			
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within	М	√	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources.	M	\checkmark	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate	M M M	✓ ✓ ✓	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker,	M	\checkmark	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).	M M M	✓ ✓ ✓	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker,	M M M	$\begin{array}{c c} \searrow \\ \searrow \\ \swarrow \\ \end{matrix}$	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features	M M M	✓ ✓ ✓	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).	M M M	$\begin{array}{c c} \searrow \\ \searrow \\ \swarrow \\ \end{matrix}$	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout	M M M	$\begin{array}{c c} \searrow \\ \searrow \\ \swarrow \\ \end{matrix}$	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns,	M M M	$\begin{array}{c c} \searrow \\ \searrow \\ \swarrow \\ \end{matrix}$	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance	M M M R	$\begin{array}{c c} \searrow \\ \searrow \\ \swarrow \\ \end{matrix}$	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.	M M M R	$\begin{array}{c c} \searrow \\ \searrow \\ \swarrow \\ \end{matrix}$	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance	M M M R	\rightarrow \rightarrow \rightarrow \rightarrow	
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for	M M M R R R		
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate featuress in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents.	M M M R R		
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. <i>Spreadsheets</i>	M M M R R R		
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. <i>Spreadsheets</i> Enter and edit data and perform calculations	M M M R R R		
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate featuress in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. <i>Spreadsheets</i> Enter and edit data and perform calculations using formulas.	M M M R R R R R R		
sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. <i>Spreadsheets</i> Enter and edit data and perform calculations	M M M R R R R R		

			· · · · · · · ·
Identify and explain terms and concepts			
related to spreadsheets (e.g., cells, columns,	Μ	\checkmark	
rows, values, charts, graphs).			
Use mathematical symbols appropriately.	Μ	\checkmark	
Use spreadsheets to make predictions, solve			
problems, and draw conclusions.	R		
Use spreadsheets to calculate, graph, organize,			
and present data in a variety of real world	R	\checkmark	
settings.		-	
Enter formulas and functions in spreadsheet			
applications.	R	\checkmark	
Use and modify spreadsheets to analyze data			
and propose solutions.	R		
Use the functions and tools of a spreadsheet			
application (e.g., autofill, sort, filter, find).	R		
Presentation Tools			
Create, edit, and format text.	М	\checkmark	
Create a series of slides and organize them to	М	\checkmark	
present research or convey data.		•	
Copy, paste, insert, and resize images within	М	\checkmark	
the slides and from outside sources.		v	
Create presentations for a variety of audiences			
and purposes with the use of appropriate	R	\checkmark	
transitions and animations to add interest.			
Digital Media			
Watch videos and use play, pause, rewind and	54	/	
forward buttons.	М	\checkmark	
Watch videos and use play, pause, rewind, and			
forward buttons while taking notes.	R	\checkmark	
Use painting/drawing tools and other		,	
applications to create and edit work.	Μ	\checkmark	
Create media for a variety of audiences and			
purposes with the use of appropriate	R	\checkmark	
transitions and animations to add interest.			
Independently use appropriate technology			
tools (graphic organizers, audio, and video) to	R	\checkmark	
define problems and propose hypotheses.	i.	v	
Research			
Use Internet browsers, search engines, and			
online directories, compare the differences,	М		
and explain how they disseminate information.	101		
	N /	/	
Identify careers and industry opportunities.	М	\checkmark	
Perform basic searches on a database (e.g.,	М	\checkmark	
library card catalog) to locate information.			
Use content-specific technology tools to gather	М	\checkmark	
and analyze data.			
Identify and analyze the purpose of a media	М	\checkmark	
message (inform, persuade, entertain).		•	
Identify and explain current hardware and	R	\checkmark	
software trends.		×	
Use Internet browsers, search engines, and			
online directories, compare the differences,	I		
and explain how they rank results.			
and explain how they rank results. Write correct in-text citations and reference			
	T	\checkmark	
Write correct in-text citations and reference	I	\checkmark	
Write correct in-text citations and reference lists for text and images gathered from	I	\checkmark	
Write correct in-text citations and reference lists for text and images gathered from electronic sources.	I M	√ √	

Communication and Collaboration			
Collaborate using technology.	М	\checkmark	
Use a variety of age-appropriate technologies			
to communicate and exchange ideas.	Μ	\checkmark	
Create projects that use text, graphics, audio,		,	
and video to communicate ideas.	М	\checkmark	
Evaluate presentations for organization,			
content, design, and appropriateness of	Μ	\checkmark	
citation.			
Plan and implement a collaborative project			
with other students using technology tools	R	\checkmark	
(e.g., email, discussion forums, video		·	
conference).			
Computational Thinking			
Create algorithms, or series of ordered steps,	М	\checkmark	
to solve problems.			
Decompose a problem into smaller, more	Μ	\checkmark	
manageable parts.	NA	/	
Collect, analyze, and represent data effectively.	М	\checkmark	
Demonstrate an understanding of how	P	,	
information is represented, stored, and	R	\checkmark	
processed by a computer.			
Optimize an algorithm for execution by a computer.	R		
Create simulations/models to understand			
natural phenomena and test hypotheses.	R	\checkmark	
Evaluate algorithms by their efficiency,			
correctness, and clarity.	I	\checkmark	
Computer Science Computing Systems			
Recommend improvements to the design of			
computing devices, based on an analysis of	R		
how users interact with the devices.	, n		
Design projects that combine hardware and			
software components to collect and exchange	R		
data.			
Systematically identify and fix problems with	_		
computing devices and their components.	R		
Networks and the Internet			
Model the role of protocols in transmitting	P		
data across networks and the Internet.	R		
Explain how physical and digital security	R		
measures protect electronic information.	ĸ		
Apply multiple methods of encryption to	R		
model the secure transmission of information.	n		
Data and Analysis			
Represent data using multiple encoding	R		
schemes.			
Collect data using computational tools and			
transform the data to make it more useful and	R		
reliable.			
Refine computational models based on the	R		
data they have generated.			
Algorithms and Programming			
Use flowcharts and/or pseudocode to address complex problems as algorithms.	R		
complex problems as algorithms.		I	

Create clearly named variables that represent	R		
different data types and perform operations on their values.	к		
Design and iteratively develop programs that			
combine control structures, including nested	R		
loops and compound conditionals.			
Decompose problems and subproblems into	_		
parts to facilitate the design, implementation,	R		
and review of programs.			
Create procedures with parameters to organize	R		
code and make it easier to reuse.			
Seek and incorporate feedback from team			
members and users to refine a solution that	R		
meets user needs.			
Incorporate existing code, media, and libraries	R		
into original programs, and give attribution.	n		
Systematically test and refine programs using a	D		
range of test cases.	R		
Distribute tasks and maintain a project timeline			
when collaboratively developing	R		
computational artifacts.			
Document programs in order to make them	_		
easier to follow, test, and debug.	R		
Impacts of Computing			
Compare tradeoffs associated with computing			
technologies that affect people's everyday	R		
activities and career options.			
Discuss issues of bias and accessibility in the	_		
design of existing technologies.	R		
Collaborate with many contributors through			
strategies such as crowdsourcing or surveys	R		
when creating a computational artifact.			
Describe tradeoffs between allowing			
information to be public and keeping	R	./	
information private and secure.	I.	v	
intornation private and secure.			

Grade 8			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use			
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	Μ	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	М	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	М		
Demonstrate safe email practices and appropriate email etiquette.	М	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	М	\checkmark	
Explore social and ethical impacts of technology	М	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	М	\checkmark	
Give examples of hardware and software that enable people with disabilities to use technology.	М	\checkmark	
Analyze and explain how media and data can be used to distort, exaggerate, and misinterpret information.	М	\checkmark	
Explain the potential risks associated with the use of networked digital environments (Internet, cell phones, wireless networks) and sharing personal information.	М		
Copyright			
Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	М	\checkmark	
ISTE Standards for Students			
Students cultivate and manage their digital identify and are aware of the permanence of their actions in the digital world.	М		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	М	\checkmark	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	М	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	Μ		
Computer Literacy			
Keyboarding Use proper posture and ergonomics.	М		
ose proper postare and ergonomics.	141	I	

Locate and use letter and number keys with	М		
left and right hand placement.			
Locate and use correct finger/hand for spacebar, enter, and shift key.	М		
Gain proficiency and speed in keyboarding	25		
(type 5 WPM per grade level beginning at 2nd	35 WPM		
grade).	VVPIVI		
File Management			
Organize files and folders.	М	\checkmark	
Manage files and save documents.	М	\checkmark	
Operate Basic Device Functionality			
Turn on the computer.	М	\checkmark	
Login and logoff the computer.	М	\checkmark	
Use a pointing device to click menus and icons.	М	\checkmark	
Open programs, web apps, and documents.	М	\checkmark	
Use buttons and media players.	М	\checkmark	
Hardware and Software			
Demonstrate an understanding of the	NA		
relationship between hardware and software.	M		
Troubleshoot basic hardware and software	R	\checkmark	
problems.		v	
Identify major computer components.	M		
Describe the major components and functions	М		
of computers and networks.			
Apply strategies for identifying and solving	NA	,	
routine problems that occur during everyday computer use.	М	\checkmark	
Word Processing			
Write, edit, save, and print documents in one sitting.	М	\checkmark	
Write, edit, save, and print documents in one	М	\checkmark	
Write, edit, save, and print documents in one sitting.	M	√ √	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size,			
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a			
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within	M	√ √	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources.	М	√	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker,	M	√ √	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs,	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers,	M M M		
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).	M M M		
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers,	M M M R		
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout	M M M		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns,	M M M R		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance	M M M R R		
 Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. 	M M M R		
 Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for 	M M M R R R		
 Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. 	M M M R R		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.Spreadsheets	M M M R R R		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations	M M M R R R		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations using formulas.	M M M R R R R R		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations	M M M R R R M		

Identify and explain terms and concepts			
related to spreadsheets (e.g., cells, columns,	M	\checkmark	
rows, values, charts, graphs).			
Use mathematical symbols appropriately.	М	\checkmark	
Use spreadsheets to make predictions, solve			
problems, and draw conclusions.	R		
Use spreadsheets to calculate, graph, organize,			
and present data in a variety of real world	R	\checkmark	
settings.			
Enter formulas and functions in spreadsheet			
applications.	R	\checkmark	
Use and modify spreadsheets to analyze data			
and propose solutions.	R		
Use the functions and tools of a spreadsheet			
application (e.g., autofill, sort, filter, find).	R		
Presentation Tools			
Create, edit, and format text.	M	\checkmark	
Create a series of slides and organize them to	м	\checkmark	
present research or convey data.		v	
Copy, paste, insert, and resize images within	м	\checkmark	
the slides and from outside sources.	101	v	
Create presentations for a variety of audiences			
and purposes with the use of appropriate	R	\checkmark	
transitions and animations to add interest.			
Digital Media			
Watch videos and use play, pause, rewind and			
forward buttons.	M	\checkmark	
Watch videos and use play, pause, rewind, and			
forward buttons while taking notes.	M	\checkmark	
Use painting/drawing tools and other			
applications to create and edit work.	Μ	\checkmark	
Create media for a variety of audiences and		, I	
purposes with the use of appropriate	М	\checkmark	
transitions and animations to add interest.			
Independently use appropriate technology	_	,	
tools (graphic organizers, audio, and video) to	R	\checkmark	
define problems and propose hypotheses.			
Research			
Use Internet browsers, search engines, and			
online directories, compare the differences,	M		
and explain how they disseminate information.			
Identify careers and industry opportunities.	М	\checkmark	
Perform basic searches on a database (e.g.,		,	
library card catalog) to locate information.	M	\checkmark	
Use content-specific technology tools to gather			
and analyze data.	M	\checkmark	
Identify and analyze the purpose of a media			
message (inform, persuade, entertain).	M	\checkmark	
Identify and explain current hardware and	Μ	\checkmark	
software trends.			
Use Internet browsers, search engines, and	_		
online directories, compare the differences,	R		
and explain how they rank results.			
and explain how they rank results. Write correct in-text citations and reference			
and explain how they rank results. Write correct in-text citations and reference lists for text and images gathered from	R	√	
and explain how they rank results. Write correct in-text citations and reference		√	
and explain how they rank results. Write correct in-text citations and reference lists for text and images gathered from		√	
and explain how they rank results. Write correct in-text citations and reference lists for text and images gathered from electronic sources.		✓ ✓	

Communication and Collaboration			
Collaborate using technology.	М	\checkmark	
Use a variety of age-appropriate technologies	IVI	V	
to communicate and exchange ideas.	М	\checkmark	
Create projects that use text, graphics, audio,			
and video to communicate ideas.	М	\checkmark	
Evaluate presentations for organization,			
content, design, and appropriateness of	М	\checkmark	
citation.			
Plan and implement a collaborative project			
with other students using technology tools		,	
(e.g., email, discussion forums, video	М	√	
conference).			
Computational Thinking			
Create algorithms, or series of ordered steps,		,	
to solve problems.	М	\checkmark	
Decompose a problem into smaller, more		,	
manageable parts.	М	\checkmark	
Collect, analyze, and represent data effectively.	М	\checkmark	
Demonstrate an understanding of how			
information is represented, stored, and	М	\checkmark	
processed by a computer.			
Optimize an algorithm for execution by a	_		
computer.	R		
Create simulations/models to understand	6	,	
natural phenomena and test hypotheses.	R	\checkmark	
Evaluate algorithms by their efficiency,	6	,	
correctness, and clarity.	R	√	
Computer Science			
Computer Science			
Computing Systems			
Computing Systems Recommend improvements to the design of	М		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of	М		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.	M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and	M 		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.			
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data.	M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with			
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data.	M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet	M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting	M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet.	M M M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet. Explain how physical and digital security	M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet. Explain how physical and digital security measures protect electronic information.	M M M M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet. Explain how physical and digital security	M M M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet. Explain how physical and digital security measures protect electronic information. Apply multiple methods of encryption to	M M M M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet. Explain how physical and digital security measures protect electronic information. Apply multiple methods of encryption to model the secure transmission of information.	M M M M		
Computing Systems Recommend improvements to the design of computing devices, based on an analysis of how users interact with the devices. Design projects that combine hardware and software components to collect and exchange data. Systematically identify and fix problems with computing devices and their components. Networks and the Internet Model the role of protocols in transmitting data across networks and the Internet. Explain how physical and digital security measures protect electronic information. Apply multiple methods of encryption to model the secure transmission of information. Data and Analysis	M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and Analysis Represent data using multiple encoding	M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and Analysis Represent data using multiple encoding schemes.	M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and Analysis Represent data using multiple encoding schemes.Collect data using computational tools and	M M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and AnalysisRepresent data using multiple encoding schemes.Collect data using computational tools and transform the data to make it more useful and	M M M M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and AnalysisRepresent data using multiple encoding schemes.Collect data using computational tools and transform the data to make it more useful and reliable.	M M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and AnalysisRepresent data using multiple encoding schemes.Collect data using computational tools and transform the data to make it more useful and reliable.Refine computational models based on the data they have generated.Algorithms and Programming	M M M M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and AnalysisRepresent data using multiple encoding schemes.Collect data using computational tools and transform the data to make it more useful and reliable.Refine computational models based on the data they have generated.	M M M M M M M		
Computing SystemsRecommend improvements to the design of computing devices, based on an analysis of how users interact with the devices.Design projects that combine hardware and software components to collect and exchange data.Systematically identify and fix problems with computing devices and their components.Networks and the InternetModel the role of protocols in transmitting data across networks and the Internet.Explain how physical and digital security measures protect electronic information.Apply multiple methods of encryption to model the secure transmission of information.Data and AnalysisRepresent data using multiple encoding schemes.Collect data using computational tools and transform the data to make it more useful and reliable.Refine computational models based on the data they have generated.Algorithms and Programming	M M M M M M M		

Create clearly named variables that represent different data types and perform operations on their values.	М		
Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.	м		
Decompose problems and subproblems into parts to facilitate the design, implementation, and review of programs.	М		
Create procedures with parameters to organize code and make it easier to reuse.	М		
Seek and incorporate feedback from team members and users to refine a solution that meets user needs.	М		
Incorporate existing code, media, and libraries into original programs, and give attribution.	м		
Systematically test and refine programs using a range of test cases.	М		
Distribute tasks and maintain a project timeline when collaboratively developing computational artifacts.	м		
Document programs in order to make them easier to follow, test, and debug.	М		
Impacts of Computing			
Compare tradeoffs associated with computing technologies that affect people's everyday activities and career options.	М		
Discuss issues of bias and accessibility in the design of existing technologies.	М		
Collaborate with many contributors through strategies such as crowdsourcing or surveys when creating a computational artifact.	М		
Describe tradeoffs between allowing information to be public and keeping information private and secure.	м	\checkmark	

Grade 9			
Standard	I/M/ R	\checkmark	← Standard may be integrated
Digital Citizenship		=	New concept
Responsible Use		,	
Demonstrate compliance of Responsible Use Policy and classroom rules regarding technology use and networks.	Μ	\checkmark	
Explain responsible uses of technology and digital information and describe potential consequences for inappropriate use.	М	\checkmark	
Identify and explain the strategies for the safe and efficient use of computers (passwords, virus protection software, etc.).	М		
Demonstrate safe email practices and appropriate email etiquette.	М	\checkmark	
Identify cyberbullying and describe strategies to deal with such a situation.	М	\checkmark	
Explore social and ethical impacts of technology	М	\checkmark	
Recognize and describe the potential risks and dangers associated with online communication.	М	\checkmark	
Give examples of hardware and software that enable people with disabilities to use technology.	М	\checkmark	
Analyze and explain how media and data can be used to distort, exaggerate, and misinterpret information.	М	\checkmark	
Explain the potential risks associated with the use of networked digital environments (Internet, cell phones, wireless networks) and sharing personal information.	Μ		
Copyright			
Explain fair use guidelines for copyrighted material (images, music, videos, etc.).	М	\checkmark	
ISTE Standards for Students Students cultivate and manage their digital			
identify and are aware of the permanence of their actions in the digital world.	М		
Students engage in positive, safe, legal, and ethical behavior when using technology including social interactions online or when using networked devices.	М	\checkmark	
Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.	М	\checkmark	
Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.	Μ		
Computer Literacy			
Keyboarding Use proper posture and ergonomics.	М		

		-	
Locate and use letter and number keys with	м		
left and right hand placement.			
Locate and use correct finger/hand for spacebar, enter, and shift key.	М		
Gain proficiency and speed in keyboarding	40		
(type 5 WPM per grade level beginning at 2nd	40 WPM		
grade).			
File Management			
Organize files and folders.	M	\checkmark	
Manage files and save documents.	M	\checkmark	
Operate Basic Device Functionality	N.4	1	
Turn on the computer.	M	\checkmark	
Login and logoff the computer.	M	\checkmark	
Use a pointing device to click menus and icons.	M	\checkmark	
Open programs, web apps, and documents.	M	\checkmark	
Use buttons and media players.	М	\checkmark	
Hardware and Software			
Demonstrate an understanding of the relationship between hardware and software.	М		
Troubleshoot basic hardware and software		,	
problems.	М	\checkmark	
Identify major computer components.	М		
Describe the major components and functions	м		
of computers and networks.			
Apply strategies for identifying and solving		,	
routine problems that occur during everyday computer use.	М	\checkmark	
Word Processing			
Write, edit, save, and print documents in one sitting.	М	\checkmark	
Write, edit, save, and print documents in one	М	\checkmark	
Write, edit, save, and print documents in one sitting.	M	√ √	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.	М		
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text.			
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within	М	√	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources.	M	\checkmark	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker,	M	\checkmark	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).	M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers,	M M M	✓ ✓ ✓	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).	M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout	M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns,	M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance	M M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.	M M M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance	M M M M	 ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ 	
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer	M M M M M M		
 Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. 	M M M M M		
 Write, edit, save, and print documents in one sitting. Use menu/toolbar functions, such as font size, font style, and line spacing to format a document. Highlight, copy, and paste text. Copy, paste, insert, and resize images within the documents and from outside sources. Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus). Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers). Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects. Use the comment function in review for peer editing. Use the track changes feature in review for peer editing of documents. 	M M M M M M		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations	M M M M M M		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations using formulas.	M M M M M M M M		
Write, edit, save, and print documents in one sitting.Use menu/toolbar functions, such as font size, font style, and line spacing to format a document.Highlight, copy, and paste text.Copy, paste, insert, and resize images within the documents and from outside sources.Proofread and edit writing using appropriate resources (spell checker, grammar checker, thesaurus).Demonstrate the use of intermediate features in word processing applications (e.g., tabs, indents, bullets, numbers, tables, headers, footers).Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, styles) to improve the appearance of documents and projects.Use the comment function in review for peer editing.Use the track changes feature in review for peer editing of documents.SpreadsheetsEnter and edit data and perform calculations	M M M M M M M		

	r		
Identify and explain terms and concepts			
related to spreadsheets (e.g., cells, columns,	M	\checkmark	
rows, values, charts, graphs).			
Use mathematical symbols appropriately.	М	\checkmark	
Use spreadsheets to make predictions, solve			
problems, and draw conclusions.	М		
Use spreadsheets to calculate, graph, organize,			
and present data in a variety of real world	М	\checkmark	
settings.			
Enter formulas and functions in spreadsheet			
applications.	M	√	
Use and modify spreadsheets to analyze data			
and propose solutions.	M		
Use the functions and tools of a spreadsheet			
application (e.g., autofill, sort, filter, find).	Μ		
Presentation Tools		/	
Create, edit, and format text.	M	\checkmark	
Create a series of slides and organize them to	м	\checkmark	
present research or convey data.		Ļ	
Copy, paste, insert, and resize images within	м	\checkmark	
the slides and from outside sources.	101	v	
Create presentations for a variety of audiences			1
and purposes with the use of appropriate	М	\checkmark	
transitions and animations to add interest.			
Digital Media			
Watch videos and use play, pause, rewind and		,	
forward buttons.	M	\checkmark	
Watch videos and use play, pause, rewind, and			
forward buttons while taking notes.	M	\checkmark	
Use painting/drawing tools and other			
applications to create and edit work.	M	\checkmark	
Create media for a variety of audiences and			
purposes with the use of appropriate	м	\checkmark	
transitions and animations to add interest.	IVI	V	
Independently use appropriate technology			
tools (graphic organizers, audio, and video) to	M	√	
define problems and propose hypotheses.			
Research			
Use Internet browsers, search engines, and			
online directories, compare the differences,	M		
and explain how they disseminate information.			
Identify careers and industry opportunities.	M	\checkmark	
Perform basic searches on a database (e.g.,	м	,	
library card catalog) to locate information.	IVI	\checkmark	
Use content-specific technology tools to gather		,	
and analyze data.	M	\checkmark	
Identify and analyze the purpose of a media			
message (inform, persuade, entertain).	M	\checkmark	
Identify and explain current hardware and			
software trends.	М	\checkmark	
Use Internet browsers, search engines, and		<u> </u>	
online directories, compare the differences,	М		
	IVI		
and explain how they rank results.			
			i l
Write correct in-text citations and reference			
Write correct in-text citations and reference lists for text and images gathered from	м	\checkmark	
Write correct in-text citations and reference lists for text and images gathered from electronic sources.	м	\checkmark	
Write correct in-text citations and reference lists for text and images gathered from electronic sources. Use Internet browsers to access information		✓	
Write correct in-text citations and reference lists for text and images gathered from electronic sources.	M	√ √	

Communication and Collaboration			
Collaborate using technology.	М	\checkmark	
Use a variety of age-appropriate technologies			
to communicate and exchange ideas.	М	\checkmark	
Create projects that use text, graphics, audio,		,	
and video to communicate ideas.	М	\checkmark	
Evaluate presentations for organization,			
content, design, and appropriateness of	М	\checkmark	
citation.			
Plan and implement a collaborative project			
with other students using technology tools	М	\checkmark	
(e.g., email, discussion forums, video conference).			
Computational Thinking Create algorithms, or series of ordered steps,			
to solve problems.	М	\checkmark	
Decompose a problem into smaller, more			
manageable parts.	М	\checkmark	
Collect, analyze, and represent data effectively.	М	\checkmark	
Demonstrate an understanding of how		•	
information is represented, stored, and	М	\checkmark	
processed by a computer.		-	
Optimize an algorithm for execution by a	NA		
computer.	М		
Create simulations/models to understand	М	\checkmark	
natural phenomena and test hypotheses.	IVI	V	
Evaluate algorithms by their efficiency,	М	\checkmark	
correctness, and clarity.		v	_
Computer Science			
Computing Systems			
Explain how abstractions hide the underlying			
implementation details of computing systems	I		
embedded in everyday objects.			
Compare levels of abstraction and interactions			
between application software, system	I		
software, and hardware layers.			
Develop guidelines that convey systematic	1		
troubleshooting strategies that others can use to identify and fix errors.	1		
Networks and the Internet			
Evaluate the scalability and reliability of			
networks, by describing the relationship			
between routers, switches, servers, topology,	I		
and addressing.			
Give examples to illustrate how sensitive data	1		
can be affected by malware and other attacks.	1		
Recommend security measures to address			
various scenarios based on factors such as	I		
efficiency, feasibility, and ethical impacts.			
Compare various security measures,			
considering tradeoffs between the usability	I		
and security of a computing system.			
Explain tradeoffs when selecting and	I		
implementing cybersecurity recommendations. Data and Analysis			
Translate between different bit			
representations of real-world phenomena,	I.		
•			
such as characters, numbers, and images.			

Evaluate the tradeoffs in how date elements		1	1
Evaluate the tradeoffs in how data elements	1		
are organized and where data is stored.			
Create interactive data visualizations using			
software tools to help others better	1		
understand real-world phenomena.	-		
Create computational models that represent			
the relationships among different elements of	1		
data collected from a phenomenon or process.			
Algorithms and Programming		1	
Create prototypes that use algorithms to solve			
computational problems by leveraging prior			
student knowledge and personal interests.			
Use lists to simplify solutions, generalizing			
computational problems instead of repeatedly	1		
using simple variables.			
Justify the selection of specific control			
structures when tradeoffs involve			
implementation, readability, and program	I I		
performance, and explain the benefits and			
drawbacks of choices made.			
Design and iteratively develop computational			
artifacts for practical intent, personal			
expression, or to address a societal issue by			
using events to initiate instructions.			
Decompose problems into smaller components			
through systemic analysis, using constructs	1		
such as procedures, modules, and/or objects.			
Create artifacts by using procedures within a			
program, combinations of data and			
procedures, or independent but interrelated			
programs.			
Systematically design and develop programs			
for broad audiences by incorporating feedback	1		
from users.			
Evaluate licenses that limit or restrict use of			
computational artifacts when using resources	1		
such as libraries.	'		
Evaluate and refine computational artifacts to			
make them more usable and accessible.	I I		
Design and develop computational artifacts			
	I.		
working in team roles using collaborative tools. Document design decisions using text,			
graphics, presentations, and/or	1		
demonstrations in the development of			
complex programs.			
Impacts of Computing			
Evaluate the ways computing impacts			
	1		
Demonstrate ways a given algorithm applies to			
problems across disciplines.			
Use tools and methods for collaboration on a			
project to increase connectivity of people in	I.		
different cultures and career fields.			
Explain the beneficial and harmful effects that			
intellectual property laws can have on	I.	\checkmark	
, , ,			
personal, ethical, social, economic, and cultural practices. Test and refine computational artifacts to reduce bias and equity deficits. Demonstrate ways a given algorithm applies to problems across disciplines.	 		

Explain the privacy concerns related to the collection and generation of data through automated processes that may not be evident to users.	I	
Evaluate the social and economic implications of privacy in the context of safety, law, or ethics.	I	