6CS

Syracuse City School District
Career and Technical Education Program
Course Syllabus
6th Grade CTE: Computer Science - Coding

Course Description

This course is an introduction to the concept of computational thinking encompassing concepts and skills, as well as computational thinking practices. Specific concepts and skills addressed include: sequence, loops, parallelism, events, conditionals, operators, and data. Computational thinking practices include: experimenting and iterating, testing, and debugging, reusing and remixing, abstracting and modularizing. The perspectives of being a creator, connector, and questioner are integrated throughout the learning experiences of computational concepts and thinking. Learning experiences are designed to be hands-on activities with mini-projects culminating in a final project- based learning experience. In addition, each unit also includes non-technology-based lessons and learning experiences so that instructors have flexibility to manage any technology constraints. This course will build and expand upon digital literacy and citizenship, career readiness skills, and the preparation process for making informed education and career choices. Career Ready Practices of the Common Career Technical Core (CCTC) and the traits, characteristics, behaviors, and skills that lead to success in school and work, including professionalism, effective communication and teamwork, and post-secondary awareness are integrated into the computational concepts, skills and practices instruction. Students participate in career exploration and will learn about their career interests and goals as well as the wide range of careers and occupations that incorporate computational thinking skills and practices.

AVID (Advancement Via Individual Determination)

SCSD is an AVID school district. AVID is a college and career readiness system whose mission is to close the opportunity gap by preparing all students for college readiness and success in a global society. Part of the AVID system is focused on instruction which is centered around WICOR (Writing, Inquiry, Collaboration, Organization and Reading). WICOR strategies are designed to help students engage with content, take ownership of their learning, and become independent learners. WICOR strategies are incorporated into each unit.

Work-Based Learning

- Students will be exposed to a wide variety of applications for computational thinking skills and practices.
- Students will interview working professionals from different careers and occupations demonstrating application of computational skills and practices through Career Coaching.
- Students will participate in field trips to high school CTE Pathway programs and local workplaces to broaden their ideas about application of computational skills and practices.
- Students will be mentored by current high school CTE students and will create and maintain a portfolio of their work-based learning experiences throughout the course.

Course Objectives

Students will be able to:

- Explain and demonstrate application of specific computational concepts and skills such as use of sequencing, loops, parallelism, events, conditionals, operators, and data.
- Explain and demonstrate use of experimenting and iterating, testing and debugging, reusing and remixing, abstracting and modularizing.
- Demonstrate use of planning, testing, revising, seeking feedback, and documenting the process through design journals.
- Demonstrate digital citizenship and digital literacy.
- Demonstrate creativity, collaboration, and perseverance.
- Explain and demonstrate the CCTC Career Ready Practices.
- Assess and describe their own strengths and abilities and areas where they need to grow and develop.
- Explain and demonstrate what professionalism looks like at school and in the workplace.
- Explain and demonstrate effective communication and teamwork skills.

Equipment and Supplies

- **School will provide:** All required materials.
- **Student will provide:** NA

Textbook

N/A

Grading

40% Class Work Assignments, and Assessments
60% Projects, Presentations

Additional Course Policies

Students are expected to:

- Be on time for class.
- Produce their best work, including being prepared for in-class presentations.
- Participate in class including contributing to discussions and critiquing their own and others' work, as well as diligently working on their own projects during the class period.
- Seek help when needed.
- Be attentive during class, ask questions if they do not understand something, and offer their opinions.

Course Calendar

Quarter	Units of Study
1	• Class Expectations • Introductions • Group Work • Introduction to Scratch: Getting Started • Constructive Feedback • Digital Citizenship • Coding and Computational Thinking: Exploring • Coding Skills and Concepts: Animations • Digital Literacy • Coding Skills and Concepts: Stories • Career Coaching
2	• Coding Skills and Concepts: Games • Career Coaching and Game Showcase • Coding Skills and Concepts: Diving Deeper • Coding Skills and Concepts: Showcase / Hackathon

6CS

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
6th Grade Computer Science - Coding

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Possible Projects/Activities	CCTC and NYS Standards
Week 1 **Class Expectations** **Introductions** **Group Work**	• What are the expectations for students in the 6th Grade CTE class? • Why is it important to know about your classmates? • What does it mean to be Career Ready? • What drives the output of technology (computers)? • What is the difference between collaboration, working together, and teamwork?	• Identify and describe classroom policies and procedures. • Write or draw their understanding about coding and what they will be learning. • Explain the basic idea that coding (software) drives outputs of technology tools (hardware). • Explain and demonstrate the difference between collaboration, working together, and team work.	**Written** • Assignment • Self-Assessment **Performance** • Class Presentation • Online Career Portfolio • Teacher Observation	**Off-line:** • Getting to Know You Activities • Team Project, e.g. Egg Drop	**Career Ready Practices** CRP 1,4,5,12 **ELA** 6R 1,2,4,7,9 6W 2,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7 **CSDF** 4-6.NSD.2,3,4,5
Week 2 **Introduction to Scratch: Getting Started** **Constructive Feedback** **Digital Citizenship**	• What is Scratch and how is it accessed? • Why are passwords important? • What makes a good password? • How can passwords be remembered and safeguarded? • What can I do in Scratch? • How is Scratch organized? • What is the purpose of design journals? • How does constructive feedback help achieve success on goals/projects? • Why is digital citizenship important? • What does it mean to be a good digital citizen? • How can students be safe and secure when using online applications?	• Establish the procedure for accessing and saving projects in Scratch using SCSD logins and O365. • Explain the importance and purpose of SCSD passwords. • Show students the online Scratch studios (this cannot be accessed using the desktop version) • Explain the concept of computational creation, in the context of Scratch. • Visualize possibilities for their own Scratch-based computational creation. • Explore resources that support their computational creation. (ie tutorials) • Create and use design journals to design and plan coding projects. • Use Scratch to create a project. • Describe warm and cool or constructive feedback as a key part of teamwork. • Participate in critique groups. • View others' projects and leave constructive feedback. • Reflect on thought processes used during a first coding design to evaluate what worked and what didn't work as intended.	**Written** • Assignment: Set up design journal • Research on digital citizenship • Quiz • Self-Assessment **Performance** • Online Career Portfolio • On-line projects and class activities • Teacher Observation	**From Creative Computing:** • Introducing Scratch • Scratch Account • Design Journal • Scratch Surprise • Scratch Studio • Critique Group **From Scratch Educator Guide:** • Animate Your Name **From Code.org Express Course:** • Additional scaffolded activities **Off-line:** • Short research project and presentation on digital citizenship	**Career Ready Practices** CRP 1,2,4,5,6,8,11,12 **ELA** 6R 1,2,4,7,9 6W 2,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7 **CSDF** 4-6.IC.2,4 4-6.CI.1 4-6.CY.1,2,3,4,5 4-6.DL.2,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Possible Projects/Activities	CCTC and NYS Standards
		• Explain the need for and demonstrate good digital citizenship, cyber safety, and security protocols. • Describe how to protect yourself online, including verifying someone's online identity, verifying that a link is safe, and identifying online scams. • Explain the ways that people can protect their personal privacy online. • Identify ways to recognize and stop cyberbullying.			
Weeks 3-4 **Coding and Computational Thinking: Exploring**	• What is coding? • What is computational thinking? • Where do we encounter coding in our lives? • What kinds of careers use coding? • How are coding projects designed? • What happens if codes are not completed correctly? • How do designers make sure their coding works? • What is the concept of sequencing and why is it foundational for coding?	• Explain what coding is. • Explain computational thinking. • Describe where coding is used in everyday life. • Describe the design process for creating coding projects: design thinking and planning. • Use design journal to sketch design. • Describe the process that designers use to make sure coding projects work: design, test, debug, test. • Create an interactive Scratch project. • Use a wide range of Scratch blocks. • Explain the concept of sequence. • Practice experimenting and iterating while creating projects. • Use design journal to document initial design test, debugging, and test process.	**Written** • Assignment • Research Project • Self-Assessments • Design Journal **Performance** • Class Presentation • Online Career Portfolio • Teacher Observation	**From Creative Computing:** • Programmed to Dance • Step-By-Step • 10 Blocks • My Studio • Debug It! • About Me **From Scratch Educator Guide:** • Imagine a World **From Code.org Express Course:** • Additional scaffolded activities **Off-line:** • Game Sketch (design journal) • Rube Goldberg Video and project (many examples and ideas for projects on-line)	**Career Ready Practices** CRP 1,2,4,5,6,7,8,11,12 **ELA** 6R 1,2,4,7,9 6W 2,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7 **CSDF** 4-6.CT.1,4,6 4-6.DL.2
Weeks 5-7 **Coding Skills and Concepts: Animations** **Digital Literacy**	• How are computers listeners? • What are the computational concepts of sequence, loops, events, parallelism, and events? • What is intellectual property and what are the rules about how it can and cannot be used? • What is the difference between open-source and market software and code?	• Explain how computers are listeners. • Describe and apply the concepts of sequence. • Explain the computational thinking concepts of loops, events, and parallelism. • Experiment with new blocks in the events, control, sound, and looks categories. • Explore various arts-themed Scratch programs. • Apply sequence, loops, events, and parallelism in a project.	**Written** • Assignment • Research Project • Quiz • Design Journal • Self-Assessments • 5-week assessment (assessment resources are available through Harvard Computational Thinking Curriculum) **Performance** • Class Presentation	**From Creative Computing:** • Performing Scripts • Build-a-Band • Orange Square, Purple Circle • It's Alive! • Debug It! • Music Video **From Scratch Educator Guide:** • Animate a Character • Make Music	**Career Ready Practices** CRP 1,2,4,5,6,7,8,11,12 **ELA** 6R 1,2,4,7,9 6W 2,4,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7 **CSDF** 4-6.IC.2 4-6.CT.4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Possible Projects/Activities	CCTC and NYS Standards
	• How can sources be evaluated for credibility, reliability, and usability? • How do you search for help, answers, or background information for a project?	• Create an animated project. • Use design journal to demonstrate planning and reflection. • Explain the concept of intellectual property and the rules about how it can and cannot be used. • Explain the difference between open-source and market software and code. • Explain how to evaluate a source for credibility, reliability, and usability. • Explain how to search for help or answers or background information for a project.	• Online Career Portfolio • Teacher Observation	**From Code.org Express Course:** • Additional scaffolded activities **Off-line:** • Make a PBJ Sandwich with verbal directions • Find a hidden object following precise directions • Recreate an unseen drawing only by partners verbal directions • Short research project and presentation on digital literacy	4-6.DL.2,3
Weeks 8-10 **Coding Skills and Concepts: Stories** **Career Coaching**	• What are the benefits of reusing and remixing while designing? • How are computational concepts and practices applied in creating coding projects? • What and where are examples of other students and professionals implementing coding? • What can we learn from CTE students and local professionals who use coding?	• Explain the benefits of reusing and remixing while designing. • Apply computational concepts (events and parallelism) and practices (experimenting and iterating, testing and debugging, reusing and remixing). • Explore computational creation within the genre of stories by designing collaborative narratives. • Prepare questions for guest speakers from CTE students/local professionals who use coding. • Summarize real world applications of coding.	**Written** • Assignment • Research Project • Quiz • Design Journal • Self-Assessment • 10-week Assessment **Performance** • Class Presentation • Teacher Observation	**From Creative Computing:** • Characters • Conversations • Scenes • Debug it! • Creature Construction • Pass It On **From Scratch Educator Guide:** • Create a Story **From Code.org Express Course:** • Additional scaffolded activities **Off-line:** • Guest Speakers: Professionals, High School CTE Students	**Career Ready Practices** CRP 1,2,4,5,6,7,8,11,12 **ELA** 6R 1,2,4,7,9 6W 2,4,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7 **CSDF** 4-6.IC.1.3.7 4-6.CT.1,6,7,8,9,10 4-6.DL.2
Week 11-13 **Coding Skills and Concepts: Games** **Career Coaching and Showcase**	• What are the computational concepts of conditionals, operators, and data (variables and lists)? • How can the computational practices of experimenting and iterating, testing and debugging, reusing and remixing, and abstracting and modularizing be	• Explain the computational concepts of conditionals, operators, and data (variables and lists). • Apply the computational practices of experimenting and iterating, testing and debugging, reusing and remixing, and abstracting and modularizing by building and extending a self-directed game project.	**Written** • Assignment • Research Project • Design Journal • Self-Assessment **Performance** • Class Presentation • Teacher observation • Game Project	**From Creative Computing:** • Dream Game List • Starter Games • Score • Extensions • Interactions • Debug It! • Game Showcase **From Scratch Educator Guide:**	**Career Ready Practices** CRP 1,2,4,5,6,7,8,10,11,12 **ELA** 6R 1,2,4,7,9 6W 2,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Possible Projects/Activities	CCTC and NYS Standards
	applied? • How do tools such as reusing and remixing help to code efficiently? • What are common game mechanics? • What can we learn from gaming professionals? • What skills do game developers need? • What other career fields might use these skills? • What are my career goals and personal vision for the future?	• Identify and describe common game mechanics. • Collaboratively create a game. • Evaluate suggestions from critique for debugging. • Showcase games to High School students, college students, and professionals. • Prepare questions for Interviews with gaming professionals. • Conduct and summarize an interview. • Reflect on career goals and personal vision for the future.		• Chase Game • Make It Fly • Pong Game **From Code.org Express Course:** • Additional scaffolded activities **Off-line:** • Guest Speakers: Gaming Development Professionals	**CSDF** 4-6.IC.1,3,7 4-6.CT.1,5,6,7,8,9,10 4-6.DL.2,4
Weeks 14-16 **Coding Skills and Concepts: Diving Deeper**	• What are my current learning goals and needs? • How can a previously started project be extended? • What are some hardware extensions that connect Scratch to the physical world? • How can computational concepts and practices of video sensing and cloning be applied? • What activity or resource can I design to support others in learning more about computational creativity?	• Reflect on past experiences to self-assess current learning goals and needs. • Develop problem or idea for up-coming project based on their goals and self-assessment. • Create a self-remix by extending a previously started project. • Describe various hardware extensions that connect Scratch to the physical world. • Apply computational concepts and practices by exploring the newest Scratch features (video sensing, cloning). • Design an activity or resource for supporting others in learning more about computational creativity.	**Written** • Assignment • Research Project • Self-Assessment **Performance** • Class Presentation • Teacher Observation	**From Creative Computing:** • Know Want Learn • Round Two • Advanced Concepts • Hardware & Extensions • Activity Design • My Debug It! **From Scratch Educator Guide:** • Video Sensing **From Code.org Express Course:** • Additional scaffolded activities **Off-line:** • Share learning support with other students • Create goal or vision board	**Career Ready Practices** CRP 1,2,4,5,6,8,10,11,12 **ELA** 6R 1,2,4,7,9 6W 2,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7 **CSDF** 4-6.IC.6 4-6.CT.1,7,8,9,10 4-6.DL.2
Weeks 17-20 **Coding Skills and Concepts: Showcase / Hackathon**	• What is a hackathon? • How can I demonstrate computational concepts and practices in a self-directed project?	• Describe the format of a hackathon event. • Demonstrate computational concepts (sequence, loops, events, parallelism, conditionals, operators, data) and practices (experimenting and iterating, testing and debugging, reusing and remixing, abstracting and modularizing) by defining, developing, and presenting	**Written** • Assignment • Research Project • Design Journal • Self-Assessment • 20 Week Assessment **Performance** • Class Presentation • Teacher Observation	**From Creative Computing:** • Project Pitch • Project Planning • Design Sprint • Project Feedback • Project Check-In • Unfocus Group • Showcase Prep • Showcase	**Career Ready Practices** CRP 1,2,4,5,6,7,8,10,11,12 **ELA** 6R 1,2,4,7,9 6W 2,5,6,7 6SL 1,2,3,4,5,6 6L 1,2,3,4,5,6 **Literacy** 6-8RST 1,2,4,6,7,8,9 6-8WHST 2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	Possible Projects/Activities	CCTC and NYS Standards
		a personally meaningful, self-directed project. • Collaborate by working in peer teams, sharing skills, and giving and receiving multiple rounds of feedback. • Brainstorm project ideas based on personal interests. • Pitch ideas, interests, and skills to form project teams. • Identify an appropriately scoped project to work on. • Develop an outline of activities or tasks required to complete the project. • Generate a preliminary list of resources required to complete the project. • Use computational concepts and practices to further develop a Scratch project of their choosing. • Work in small critique groups to give preliminary feedback on projects. • Test projects-in-progress. • Formulate and share feedback for others. • Review project progress and feedback. • Develop an outline of activities or tasks required to complete the project. • Generate a list of resources required to complete the project. • Interview, observe, and ask others for feedback on projects-in-progress. • Demonstrate creativity, collaboration and perseverance. • Complete on their final project drafts. • Prepare for the final project showcase. • Share their final projects with others and reflect on their overall design process and computational creation experiences.			**CSDF** 4-6.CT. 1,2,3,4,5,6,7,8,9,10 4-6.DL.2,4

Computational Thinking

Key definitions for Computational Thinking from Creative Computing at Harvard

Computational thinking involves three key dimensions:
1. knowing certain computational **concepts**
2. being able to employ those concepts using computational **practices**
3. developing new computational **perspectives** an awareness of self, others, and world.

Computational Concepts

CONCEPT	DESCRIPTION
sequence	identifying a series of steps for a task
loops	running the same sequence multiple times
parallelism	making things happen at the same time
events	one thing causing another thing to happen
conditionals	making decisions based on conditions
operators	support for mathematical and logical expressions
data	storing, retrieving, and updating values

Computational Practices

PRACTICE	DESCRIPTION
experimenting and iterating	developing a little bit, then trying it out, then developing more
testing and debugging	making sure things work-and finding and solving problems when they arise
reusing and remixing	making something by building on existing projects or ideas
abstracting and modularizing	exploring connections between the whole and the parts

Computational Perspectives

PERSPECTIVE	DESCRIPTION
expressing	realizing that computation is a medium of creation- “I can create.”
connecting	recognizing the power of creating with and for other- “I can do different things when I have access to others.”
questioning	feeling empowered to ask questions about the world- “I can (use computation to) ask questions to make sense of (computational things in) the world.”

Standards

CCTC: Common Career and Technical Core

Career Ready Practices

1	Act as a responsible and contributing citizen and employee.
2	Apply appropriate academic and technical skills.
3	Attend to personal health and financial well-being.
4	Communicate clearly and effectively and with reason.
5	Consider the environmental, social, and economic impacts of decisions.
6	Demonstrate creativity and innovation.
7	Employ valid and reliable research strategies.
8	Utilize critical thinking to make sense of problems and persevere in solving them.
9	Model integrity, ethical leadership, and effective management.
10	Plan education and career paths aligned to personal goals.
11	Use technology to enhance productivity.
12	Work productively in teams while using cultural global competence.

Full Text: Career Ready Practices

NYS ELA Standards

6th Grade Reading Standards (Literary and Informational Text)

Key Ideas and Details	
6R1	Cite textual evidence to support an analysis of what the text says explicitly/implicitly and make logical inferences.
6R2	Determine a theme or central idea of a text and how it is developed by key supporting details over the course of a text; summarize a text.
6R3	In literary texts, describe how events unfold, as well as how characters respond or change as the plot moves toward a resolution.
Craft and Structure	
6R4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings.
6R5	In literary texts, analyze how a particular sentence, paragraph, stanza, chapter, scene, or section fits into the overall structure of a text and how it contributes to the development of theme/central idea, setting, or plot. In informational texts, analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and how it contributes to the development of theme/central ideas.
6R6	In literary texts, identify the point of view and explain how it is developed and conveys meaning. In informational texts, explain how an author's geographic location or culture affects his or her perspective.
Integration of Knowledge and Ideas	
6R7	Compare and contrast how different formats, including print and digital media, contribute to the understanding of a subject.
6R8	Trace and evaluate the development of an argument and specific claims in texts, distinguishing claims that are supported by reasons and relevant evidence from claims that are not.
6R9	Use established criteria in order to evaluate the quality of texts. Make connections to other texts, ideas, cultural perspectives, eras, and personal experiences.

6th Grade Writing Standards

Text Types and Purposes	
6W1	Write arguments to support claims with clear reasons and relevant evidence.
6W2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.
6W3	Write narratives to develop real or imagined experiences or events using effective techniques, descriptive details, and sequencing.
6W4	Create a poem, story, play, artwork, or other response to a text, author, theme, or personal experience.
Research to Build and Present Knowledge	
6W5	Draw evidence from literary or informational texts to support analysis, reflection, and research. Apply the grade 6 Reading Standards to both literary and informational text, where applicable.
6W6	Conduct research to answer questions, including self-generated questions, drawing on multiple sources and refocusing the inquiry when appropriate.
6W7	Gather relevant information from multiple sources; assess the credibility of each source; quote or paraphrase the data and conclusions of others; avoid plagiarism and provide basic bibliographic information for sources.

6th Grade Speaking and Listening

Comprehension and Collaboration	
6SL1	Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.
6SL2	Interpret information presented in diverse formats (e.g., including visual, quantitative, and oral) and explain how it relates to a topic, text, or issue under study.
6SL3	Delineate a speaker's argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.
Presentation of Knowledge and Ideas	
6SL4	Present claims and findings, sequencing ideas logically and using relevant descriptions, facts, and details to accentuate central ideas or themes; use appropriate eye contact, adequate volume, and clear enunciation.
6SL5	Include digital media and/or visual displays in presentations to clarify information and emphasize and enhance central ideas or themes.
6SL6	Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

6th Grade Language Standards

Conventions of Academic English	
Anchor L1	Demonstrate command of the conventions of academic English grammar and usage when writing or speaking.
Anchor L2	Demonstrate command of the conventions of academic English capitalization, punctuation, and spelling when writing.
Knowledge of Language	
6L3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.
Vocabulary Acquisition and Use	
6L4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases, choosing flexibly from a range of strategies.
6L5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
6L6	Acquire and accurately use general academic and content-specific words and phrases; apply vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Core Conventions Skills for Grades 6-8

- Ensure that pronouns are in the proper case (subjective, objective, and possessive).
- Recognize and correct inappropriate shifts in pronoun number and person.
- Recognize and correct pronouns that have unclear or ambiguous antecedents.
- Explain the function of phrases and clauses in general, as well as in specific sentences.
- Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.
- Use simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.
- Explain the function of verbals (gerunds, participles, infinitives).
- Form and use verbs in the active and passive voice.
- Recognize and correct inappropriate verb shifts.

Core Punctuation and Spelling Skills for Grades 6-8

- Use punctuation (commas, parentheses, dashes, hyphens) to clarify and enhance writing.
- Use punctuation (comma, ellipsis, dash) to indicate a pause or break.
- Use an ellipsis to indicate an omission.

NYS Literacy Standards: NYS Next Generation 6-12 Literacy Standards in History/Social Studies, Science, and Technical Subjects

Reading Standards for Literacy in Science and Technical Subjects 6	
6-8RST 1	Cite specific evidence to support analysis of scientific and technical texts, charts, graphs, diagrams, etc. Understand and follow a detailed set of directions.
6-8RST 2	Determine the central ideas or conclusions of a source; provide an accurate, objective summary of the source distinct from prior knowledge or opinions.
6-8RST 3	Describe how and why scientific ideas and reasoning are developed and modified over the course of a text, source, argument, etc.
6-8RST 4	Determine the meaning of symbols, key terms, and other content-specific words and phrases as they are used in scientific or technical sources.
6-8RST 5	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
6-8RST 6	Identify purpose and/or point of view when an author is presenting information, describing a procedure, discussing an experiment, etc. Compare and contrast the information gained from two or more experiments, simulations, videos, multimedia sources, readings from texts, graphs, charts, etc. on the same topic.
6-8RST 7	Identify and match scientific or technical information presented as text with a version of that information presented visually (e.g., in a flowchart, diagram, model, graph, or table).
6-8RST 8	For scientific sources, distinguish between observation and inference-based judgments, and reasoned judgment and opinion. For technical sources, distinguish between facts and reasoned judgment.
6-8RST 9	Compare and contrast the information gained from two or more experiments, simulations, videos, multimedia sources, readings from texts, graphs, charts, etc. on the same topic.

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6	
6-8WHST 1	Write arguments focused on discipline-specific content.
6-8WHST 2	Write informative/explanatory text focused on discipline-specific content.
6-8WHST 3	Write narratives to understand an event or topic, appropriate to discipline-specific norms, conventions, and tasks.
6-8WHST 4	Write responses to texts and to events (past and present), ideas, and theories that include personal, cultural, and thematic connections.
6-8WHST 5	Conduct short research projects to answer a question (including a self-generated question by the end of grade 8), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
6-8WHST 6	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source by applying discipline-specific criteria used in the social sciences or sciences; and quote or paraphrase the data/accounts and conclusions of others while avoiding plagiarism and following a standard format for citation.
6-8WHST 7	Draw evidence from informational texts to support analysis, reflection, and research.

Full Text: New York State 6-8 Next Generation ELA Standards at a Glance

NYS K-12 Computer Science and Digital Fluency Learning Standards

Subconcept	Standard	
Impacts of Computing		
Society	4-6.IC.1	Describe computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.
	4-6.IC.2	Explain how laws impact the use of computing technologies and digital information.
Ethics	4-6.IC.3	Explain current events that involve computing technologies.
	4-6.IC.4	Explain who has access to data in different digital spaces.
	4-6.IC.5	Explain how computer systems play a role in human decision-making.
Accessibility	4-6.IC.6	Identify and explain ways to improve the accessibility and usability of a computing device or software application for the diverse needs and wants of users.
Career Paths	4-6.IC.7	Identify a diverse range of role models in computer science.
Computational Thinking		
Modeling and Simulation	4-6.CT.1	Develop a computational model of a system that shows changes in output when there are changes in inputs.
Data Analysis and Visualization	4-6.CT.2	Collect digital data related to a real-life question or need.
	4-6.CT.3	Visualize a simple data set in order to highlight relationships and persuade an audience.
Abstraction and Decomposition	4-6.CT.4	Decompose a problem into smaller named tasks, some of which can themselves be decomposed into smaller steps.
	4-6.CT.5	Identify and name a task within a problem that gets performed multiple times while solving that problem, but with slightly different concrete details each time.
Algorithms and Programming	4-6.CT.6	Compare two or more algorithms and discuss the advantages and disadvantages of each for a specific task.
	4-6.CT.7	Identify pieces of information that might change as a program or process runs.
	4-6.CT.8	Develop algorithms or programs that use repetition and conditionals for creative expression or to solve a problem.
	4-6.CT.9	Explain each step of an algorithm or program that includes repetition and conditionals for the purposes of debugging.
	4-6.CT.10	Describe the steps taken and choices made to design and develop a solution using an iterative design process.
Network and System Design		
Hardware and Software	4-6.NSD.1	Propose improvements to the design of a computing technology based on an analysis of user interactions with that technology.
	4-6.NSD.2	Model how computer hardware and software work together as a system to accomplish tasks.
	4-6.NSD.3	Determine potential solutions to solve hardware and software problems using common troubleshooting strategies.
Networks and the Internet	4-6.NSD.4	Model how data is structured to transmit through a network.
	4-6.NSD.5	Describe that data can be stored locally or remotely in a network.
Cybersecurity		
Risks	4-6.CY.1	Explain why different types of information might need to be protected.
Safeguards	4-6.CY.2	Describe common safeguards for protecting personal information.
	4-6.CY.3	Describe trade-offs between allowing information to be public and keeping information private and secure.
	4-6.CY.4	Model and explain the purpose of simple cryptographic methods.
Response	4-6.CY.5	Explain suspicious activity of applications and devices.
Digital Literacy		
Digital Use	4-6.DL.1	Type on a keyboard while demonstrating proper keyboarding technique.
	4-6.DL.2	Select appropriate digital tools to communicate and collaborate while learning with others.
	4-6.DL.3	Conduct and refine advanced multi-criteria digital searches to locate content relevant to varied learning goals.
	4-6.DL.4	Use a variety of digital tools and resources to create and revise digital artifacts.
	4-6.DL.5	Identify common features of digital technologies.
Digital Citizenship	4-6.DL.6	Describe persistence of digital information and explain how actions in online spaces can have consequences.
	4-6.DL.7	Identify and describe actions in online spaces that could potentially be unsafe or harmful.

Full Text: New York State 4-6 Computer Science and Digital Fluency Standards