



West Windsor-Plainsboro Regional School District

Unit 1: Intro to 7th Grade Computer Cycle	
Content Area: Technology	
Course & Grade Level: Computer Cycle Grade 7	
Summary and Rationale	
<ul style="list-style-type: none"> Students will understand the 30 day progression of the 7th grade computer cycle class by way of general introduction to the course, computer lab procedures, and curriculum related software Students will understand the use of technology tools to broaden and reinforce learning, increase productivity, and foster creativity not only in the computer cycle class but across all content areas Students will participate in an inclusive and diverse computing culture, learning strategies for incorporating perspectives from people of different genders, ethnicities, and abilities. An inclusive computing environment facilitates productive collaboration in the computer classroom. 	
Recommended Pacing	
3 days	
New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills	
Standard: Standards for Career Readiness, Life Literacies and Key Skills	
CPI #	Cumulative Progress Indicator (CPI)
9.4.8.TL.3	Select appropriate tools to organize and present information digitally
9.4.8.GCA.1	Model how to navigate cultural differences with sensitivity and respect
9.4.8.GCA.2	Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.
ISTE 1.7a	Students use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Building intrapersonal/interpersonal and collaborative skills Importance of relationships in getting to know your peers and your teacher and class expectations Understanding how to use technology tools to broaden and reinforce learning, increase productivity, and foster creativity 	
Unit Essential Questions	
<ul style="list-style-type: none"> How does equitable collaboration lead to increased productivity? How do students communicate their interests, skills, and goals? Why is it important to understand and use technology tools appropriately? 	
Objectives	
Students will know: <ul style="list-style-type: none"> How to use and choose technology to gather and communicate information in an effective, efficient, and appropriate manner Students will be able to: <ul style="list-style-type: none"> Become collaborative and effective communicators Understand and implement classroom and school rules, procedures, and expectations Use new and familiar technology tools to broaden and reinforce learning, increase productivity, and foster creativity 	
Evidence of Learning	
Assessment	
Students will collaboratively create a digital product as means of introduction using available technology.	
Resources	
kahoot.com wordart.com	

Unit 2: Internet Searching	
Content Area: Technology	
Course & Grade Level: Computer Cycle Grade 7	
Summary and Rationale	
<ul style="list-style-type: none"> Students will learn the importance of using different keywords and queries, multiple sites, and search tabs to uncover relevant, authentic, and trustworthy information on the Internet Students will learn to effectively cite sources Who give proper credit to content authors and to avoid plagiarism 	
Recommended Pacing	
3 days	
New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills	
Standard: Standards for Career Readiness, Life Literacies and Key Skills	
CPI #	Cumulative Progress Indicator (CPI)
9.4.8.DC.1	Analyze the resource citations in online materials for proper use.
9.4.8.DC.2	Provide appropriate citation and attribution elements when creating media products
ISTE 1.3a	Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Information can be curated from the Internet using accurate and careful search strategies It is important to authenticate resources to corroborate information from multiple sources It is necessary to accurately cite sources to avoid plagiarism 	
Unit Essential Questions	
<ul style="list-style-type: none"> What are examples of effective search strategies? How do we effectively corroborate information from multiple sources? What information comprises a proper Internet citation? 	
Objectives	
Students will know: <ul style="list-style-type: none"> Students will know how to effectively use the Internet as a research tool. Students will be able to: <ul style="list-style-type: none"> Students will be able to apply effective (independent and collaborative) search techniques to help them uncover relevant, authentic, and trustworthy information on the Internet Students will be able to corroborate information from multiple sources Students will be able to accurately cite an Internet resource. 	
Evidence of Learning	
Assessment	
Students will participate in various Internet research activities and challenges.	
Resources	
Search engines googleaday.com	

Unit 3: Cyberbullying Awareness	
Content Area: Technology	
Course & Grade Level: Computer Cycle Grade 7	
Summary and Rationale	
<ul style="list-style-type: none"> • Student reinforcement of behaviors required for effective, appropriate, and responsible uses of technology. • Model appropriate online behaviors in order to curb the cyberbullying trend. • Learn to apply strategies to effectively respond to instances of cyberbullying. 	
Recommended Pacing	
1 day	
New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills	
Standard: Standards for Career Readiness, Life Literacies and Key Skills	
CPI #	Cumulative Progress Indicator (CPI)
9.4.8.DC.4	Explain how information shared digitally is public and can be searched, copied, and potentially seen by public audiences
9.4.8.DC.5	Manage digital identity and practice positive online behavior to avoid inappropriate forms of self-disclosure.
9.4.8.IML.9	Distinguish between ethical and unethical uses of information and media
ISTE 1.2b	Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> • Learn to use technology (ie social media) responsibly • Understand the sometimes fine line between positive and negative uses of technology • There are effective strategies for responding to cyberbullying incidents 	
Unit Essential Questions	
<ul style="list-style-type: none"> • What does it mean to use technology responsibly and in a positive way? • What are methods one can use to respond to cyberbullying instances? 	
Objectives	
Students will know: <ul style="list-style-type: none"> • There is help available and they can be upstanders in the struggle to end cyberbullying. Students will be able to: <ul style="list-style-type: none"> • Students will be able to model appropriate and ethical behavior when using technology. • Students will be able to articulate strategies for responding to cyberbullying. 	
Evidence of Learning	
Assessment	
Collaborative activities to model appropriate behavior when using technology and to consider their response to cyberbullying scenarios.	
Resources	
BrainPop Common Sense Media School anti-bullying counselor Netsmartz	

Unit 4: Computer Programming	
Content Area: Technology	
Course & Grade Level: Computer Cycle Grade 7	
Summary and Rationale	
<ul style="list-style-type: none"> A working knowledge of core computer programming concepts, such as variables, loops, and conditional logic. Coding skills are used to develop critical thinking and problem solving skills. 	
Recommended Pacing	
9 days	
New Jersey Student Learning Standards for Computer Science and Design Thinking	
Standard: Standards for Computer Science and Design Thinking	
CPI #	Cumulative Progress Indicator (CPI)
8.1.8.AP.2	Create clearly named variables that represent different data types and perform operations on their values.
8.1.8.AP.3	Design and iteratively develop programs that combine control structures, including nested loops and compound conditionals.
8.1.8.AP.5	Create procedures with parameters to organize code and make it easier to reuse
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Computers can be programmed to perform simple to complex tasks. Computer code must follow logical sequence for accuracy and precision. Computer concepts (i.e. variables, loops, conditional logic) are synthesized across most programming languages. Computer programming requires identifying a problem and applying critical thinking to solve it. Computer programming is an iterative process involving testing and refining code. 	
Unit Essential Questions	
<ul style="list-style-type: none"> How can a problem be broken down into smaller tasks? When is the use of a variable, loop, or conditional logic appropriate in solving a coding problem? How does the logical sequence of coding instructions affect the output? Why is it necessary to test and refine code? 	
Objectives	
Students will know: <ul style="list-style-type: none"> Students will know that a problem can be broken down into smaller tasks. Students will know that there are multiple solutions to a single problem. Students will know that a variety of coding concepts can be used to solve a problem. Students will know that the order of programming instructions affects the output. Students will be able to: <ul style="list-style-type: none"> Students will be able to apply computer programming skills using logic, analysis, and design flow to tackle and solve computer programming challenges. 	
Evidence of Learning	
Assessment	
Students will work on a variety of independent and collaborative computer programming challenges.	
Resources	
code.org microbit.org tinkercad.com	

Unit 5: 3D Design	
Content Area: Technology	
Course & Grade Level: Computer Cycle Grade 7	
Summary and Rationale	
<ul style="list-style-type: none"> Using the basic elements of Computer Aided Design (CAD) to assist in the modeling and fabrication process Extend beyond limitations of 2D sketches to 3D modeling and design using three axes Using proportional reasoning to scale a model Enable collaboration and creative expression in the design process 	
Recommended Pacing	
6 days	
New Jersey Student Learning Standards for Computer Science and Design Thinking	
Standard: Standards for Computer Science and Design Thinking	
CPI #	Cumulative Progress Indicator (CPI)
8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).
ISTE 1.4b	Students select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
ISTE 1.4c	Students develop, test and refine prototypes as part of a cyclical design process.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Engineering design is a systematic, creative, and iterative process. The process includes generating ideas, choosing the best solution, and making, testing, and redesigning models or prototypes. Engineering design requirements and specifications involve making trade-offs between competing requirements and desired design features. 	
Unit Essential Questions	
<ul style="list-style-type: none"> How can a 2D sketch be extended to a 3D model? What are the tools required to navigate a 3D environment? How do scale, rotation, and multiple axes play into designing a purposeful 3D model? 	
Objectives	
Students will know: <ul style="list-style-type: none"> Students will know how to extend a 2D sketch into a 3D model. Students will identify the purpose of necessary tools to navigate a 3D environment Students will be able to: <ul style="list-style-type: none"> Students will be able to apply the basic elements of Computer Aided Design (CAD) as they digitally mold shapes into a variety of purposeful 3D creations 	
Evidence of Learning	
Assessment	
Students will create a variety of 3D designs and models as they navigate modeling software	
Resources	
Sketch Up for Schools Tinkercad BrainPop	

Unit 6: Graphic Design	
Content Area: Technology	
Course & Grade Level: Computer Cycle Grade 7	
Summary and Rationale	
<ul style="list-style-type: none"> Using creative expression to graphically convey a message. Combining text and pictures to create images that communicate a specific message. Using graphics to enhance digital products. Using digital tools for photo editing, illustrating, and desktop publishing. 	
Recommended Pacing	
8 days	
New Jersey Student Learning Standards for Career Readiness, Life Literacies and Key Skills	
Standard: Standards for Career Readiness, Life Literacies and Key Skills	
CPI #	Cumulative Progress Indicator (CPI)
9.4.8.IML.3	Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping
ISTE 1.6b	Students create original works or responsibly repurpose or remix digital resources into new creations.
Instructional Focus	
Unit Enduring Understandings	
<ul style="list-style-type: none"> Digital tools are appropriate for creating text, visualizations, graphic images, and communicating with others. Graphics allow for broad concepts and data to be more effectively communicated. Graphics can be original works or remixed into unique creations. 	
Unit Essential Questions	
<ul style="list-style-type: none"> How can a message be effectively communicated via graphic design? What tools are available to create or manipulate images and graphics? How can new designs be created by remixing existing graphics? 	
Objectives	
Students will know: <ul style="list-style-type: none"> Students will know how to use graphic design to communicate an idea or message. Students will know how to use available tools to create unique graphic designs. Students will know how to use digital tools for creative expression. Students will be able to: <ul style="list-style-type: none"> Students will be able to use a variety of graphical tools in the creation of unique and remixed designs. 	
Evidence of Learning	
Assessment	
Students will create unique graphic designs using a variety of digital tools to communicate messages and ideas	
Resources	
Photo Editing Canva Painting/Illustrating Software MS Word Google Drawing Remove.bg	