DELAWARE VALLEY SCHOOL DISTRICT

<u>PLANNED INSTRUCTION</u>

A PLANNED COURSE FOR:

Computer Applications
_____

Grade Level:

9-12

Date of Board Approval: _____2023_____

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Planned Instruction

Title of Planned Instruction: Computer Applications

Subject Area: Business Education   **Grade(s): 9-12**

Course Description:

This course has been designed to combine the concepts of previously separate courses of Cyberskills, Computer Literacy, and Desktop Publishing. Using Microsoft Office and Google Applications, students will learn how to effectively create and maintain various types of documents including but not limited to business documents and spreadsheets. Students will also learn how to perform efficient Internet searches and gather credible information while maintaining a secure cloud presence and be aware of their communication interactions while online. A mixture of hands-on activities, comprehensive projects, writing assignments, and presentations will be used throughout the course. This is a project-based course which relies heavily on successful independent work skills. A basic understanding of existing office programs is suggested.

Time/Credit for the Course: One Semester/ 2 Marking Periods/ .5 Credit

Curriculum Writing Committee: JoAnne Yanko

Course Weighting

Major Projects	30%
Class Activities	60%
Participation	10%
Total	100%

Curriculum Map

Overview

<u>Marking Period One</u>: CodeHS Modules
Students will build upon previous knowledge of computers and the Internet while adding additional skills about Cybersecurity and Digital Citizenship utilizing modules through CodeHS.

Goals
> **Understanding of:**
> - Identify important historical events in the development of modern computers.
> - Explore individual's contributions to the development of the computer and discuss who gets to be included in the *computer innovators* group.
> - Understand what the internet is.
> - Understand how the internet works.
> - Discuss the issue of anonymity.
> - Understand the legal and ethical concerns surrounding internet censorship.
> - Understand how their online activity contributes to a permanent and public digital footprint.
> - Articulate their own social media guidelines to protect their digital footprint.
> - Set individual learning goals for themselves in the cybersecurity course.
> - Explain why it is important to learn computer science, regardless of their goals in college and career.

<u>Marking Period Two</u>: Document processing, Spreadsheet processing, Consumer Internet Application
To use various software programs to create and format word-based documents, numeric spreadsheets containing formulas. Integrate the programs, and to efficiently use the Internet for consumer-based practices.

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Understanding of:
- Utilize word processing programs to create and format various types of documents for use in consumer and educational settings.
- Utilize spreadsheet programs to create and format various types of numeric expressions, build formulas, and display data in consumer and educational settings.
- Using online academic tools to locate credible academic information.
- Using a cloud-based storage drive and its applications to create and maintain documents, as well as collaborate with others.
- Applying best practices to protect information and identity when using electronic devices and programs.
- Utilize the Internet to complete consumer activities such as banking, researching careers and colleges, as well as practical events such as shopping and travel planning.

Marking Period 1: CodeHS Modules

Big Idea #1 Computer and Information Technologies: Computer technology is a data management and communication tool essential for business and personal productivity, problem-solving, and decision making in the global world.

Big Idea #2 Computer and Information Technologies: Computer technology is a data management and communication tool essential for business and personal productivity, problem-solving, and decision making in the global world.

Marking Period 2: Document processing, Spreadsheet processing, Consumer Internet Application

Big Idea # 1: Computer and Information Technologies: Computer technology is a data management and communication tool essential for business and personal productivity, problem solving, and decision making in the global world.

Big Idea #2: Computer and Information Technologies: Computer technology is a data management and communication tool essential for business and personal productivity, problem-solving, and decision making in the global world.

Textbook: The Office Specialist.com, BE Publishing
Online curriculum through CodeHS https://codehs.com/curriculum/catalog?ref=20

CodeHS Modules: Intro to the Internet, World of Computing, Digital Citizenship, Fundamentals of Cybersecurity

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Marking Period 1: CodeHS Modules   **Time Range in Days:**   **45 days**

Standard(s):
PA Core Writing for Science and Technical Subjects: CC3.6.11-12.A, B, E, G
PA Core Reading for Science and Technical Subjects: CC.3.5.11-12.D, G
PA Core BCIT: 15.3.12.T
                 15.4.12.B
PA Career Education and Work: 13.1.11.A, B. 13.4.11.B
ISTE Standards 1-5
Anchors: R11.B.3 and R.11.A.2

Objectives:
Analyze the role of media in everyday life (DOK 4)
Recognize the risk of sharing inappropriate information online (DOK 1, 2)
Summarize the legal and ethical considerations involved in using the creative work of others (DOK 2, 3)
Apply critical thinking and ethical decision making when using the creative work of others (DOK 4)
Identify the factors involved in cyberbullying; identify preventative and reactionary measures that can be taken in the presence of cyberbullying (DOK 2, 3)
Define digital citizenship and identify students' online responsibilities (DOK 1, 2)
Analyze examples of good and bad situations of online ethics (netiquette) (DOK 4)
Cite evidence of the risks and benefits of assuming different personas online and think critically about what it means to be genuine in an online context. (DOK 3)
Identify the purpose of protecting personal information while online, respecting others' privacy online, and the importance of implementing privacy policies in companies (DOK 2, 3)

Eligible Content: (All activities accessible through CodeHS Modules as previously listed)
- Identify important historical events in the development of modern computers.
- Explore individual's contributions to the development of the computer and discuss who gets to be included in the *computer innovators* group.
- Understand the main parts of a computer.
- Differentiate the difference between hardware and software.
- Identify input and output devices.
- Learn different types of networks.
- Understand and identify different types of software and their functions.
- Understand and identify the physical components of a computer & their roles in computer functionality.
- Discuss the future of technology and computers in the world.

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- Students will be able to create and present on a specific model of computer using any technology where a computer is the main component (phone, robots, drone, etc.)
- Understand what the internet is and how it works.
- Discuss the issue of anonymity.
- Understand the legal and ethical concerns surrounding internet censorship.
- Discuss and answer questions about the hardware that powers the internet.
- Discuss the necessity of internet protocols.
- Recognize the hierarchy of elements in an IP address.
- Explain how computers communicate using routers.
- Explain what considerations are made when choosing a router.
- Discuss how routers are fault-tolerant because of redundancy.
- Explain the packet process and how protocols (TCP/IP and HTTP) are vital to the exchange of information on the Internet.
- Explain the Hyper Text Transfer Protocol.
- Analyze the different ways that the Internet impacts their lives by learning about how the Internet contributes to collaboration, communication, etc
- Evaluate whether the Internet has a more positive or negative effect on their community by citing examples from the lesson.
- Explain what the digital divide is and articulate their own opinions related to it.
- Complete the performance task by choosing an innovation enabled by the Internet and exploring its effects.
- Produce a computational artifact by creating a visualization, a graphic, a video, a program, or an audio recording that you create using a computer.
- Understand how their online activity contributes to a permanent and public digital footprint.
- Articulate their own social media guidelines to protect their digital footprint.
- Understand the impact of cyberbullying and identify unacceptable bullying behavior.
- Identify proper actions to take if they are victims of cyberbullying or if they observe someone being cyberbullied.
- Identify predatory behavior and how to respond to it online.
- Use best practices in personal privacy and security, including strong passwords, using https, and reading privacy policies.
- Effectively search for and evaluate resources.
- Explain what copyright laws are and why they are important.
- Find images they are legally allowed to use in their projects.
- Accurately attribute images they find and want to use.
- Identify the difference between white hat hacking and black hat hacking.
- Explain career opportunities in cybersecurity.
- Set individual learning goals for themselves in the cybersecurity course.
- Explain why it is important to learn computer science, regardless of their goals in college and career.
- Define cybersecurity.
- Describe how the Internet of Things makes people more vulnerable to cyber-attacks.

- Reflect on recent cyber-attacks and identify the financial and societal impact of the attack.
- Evaluate recent cyber-attacks and understand the negative consequences of these attacks.
- Understand career opportunities in the field of cybersecurity.
- Confidentiality is the protection of information from people who are not authorized to view it.
- Integrity aims at ensuring that information is protected from unauthorized or unintentional alteration.
- Availability is the assurance that systems and data are accessible by authorized users when and where needed.

Assessments:
Diagnostic: Participation in class discussions and demonstrations and response to questions and surveys
Formative: Completion of various activities throughout the online modules
Summative: Online Quizzes and Projects

Materials and Resources:

Computers with Internet Access
CodeHS Online modules: www.codehs.com

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Marking Period 2: Document processing, Spreadsheet processing, Consumer Internet Applications   **Time Range in Days:**   45 days

Standard(s):
PA Core Writing for Science and Technical Subjects: CC3.6.11-12.A, B, E, G
PA Core Reading for Science and Technical Subjects: CC.3.5.11-12.D, G
PA Core BCIT: 15.4.12.A, C, D, G, K
PA Career Education and Work: 13.1.11.A, B. 13.4.11.B
ISTE Standards 1-5
Anchors: R11.B.3 and R.11.A.2

Objectives:
Identify the correct software program to complete assigned tasks (DOK 1,2)
Implement prior computer skills to complete assigned tasks (DOK 2,3)
Review completed documents to required standards (DOK 3)
Apply the use of basic and advanced Internet tools such as search engines and academic databases, digital libraries, and subject directories (DOK 2, 3)
Analyze and determine the credibility and accuracy of a website (DOK 3, 4)
Apply effective navigation skills within websites to located specific information (DOK 2, 3)

Eligible Content: (Activities are pulled from the Office Specialist.com Textbook as well as various online free sources. Activities are adapted as needed to fit student needs and skill levels)

- Create various documents in word processing and spreadsheet software according to required standards set forth in each assignment.
- Utilizing creativity and design skills to create and edit business logos.
- Implement technical writing skills to develop effective business documents.
- Exercise accounting (math) skills to project revenue and inventory spreadsheets
- Implement presentation skills to design slide shows.
- Analyze the impact of internet research on a student's daily academic routine.
- Discuss the benefits and drawbacks of the internet in education.
- Effectively navigate advanced websites such as libraries and subject directories to find specific information.
- Effectively determine opinion-based vs fact-based information presented on a website.
- Utilize various information-based websites to research career statistics.
- Utilize various information-based websites to research colleges.
- Utilize various retail shopping/e-commerce websites to compare products and policies.

- Utilize various travel-planning and tourism websites to research and plan various trips and report the information into a presentation.
- Integrate programs with website research to create presentations and documents that reflect practical online consumer activities.
- Create and maintain a digital portfolio of various items created throughout the course.
- Collaborate with peers on various activities.
- Explore careers related to digital technologies inclusive of, but not limited to programming, security, design, analysis, and cloud-computing.

Assessments:

Diagnostic: Participation in class discussions and demonstrations and response to questions and surveys

Formative: Completion of various activities throughout the unit

Summative: Quizzes, Projects, maintenance of document portfolio

Materials and Resources:

Computers
Internet access
Word processing program(s): Microsoft Word and Google Docs
Spreadsheet program(s): Microsoft Excel and Google Sheets
Presentations, handouts and sample documents
Extended websites www.theofficespecialist.com , www.microsoft.com
Bureau of Labor Statistics: www.bls.gov
College Board: www.bigfuture.collegeboard.org
Various retail sites including but not limited to: Amazon, Wal-Mart, Target, etc.
Various travel planning sites including but not limited to: Fodor's, Travelocity, Expedia, etc.

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Appendix

Full Text of Standards

PA Core Writing for Science and Technical Subjects

CC3.6.11-12.A: Write arguments focused on discipline-specific content.

CC3.6.11-12.B: Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.

CC3.6.11-12.E: Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

CC3.6.11-12.G: Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

PA Core Reading for Science and Technical Subjects

CC.3.5.11-12.D: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.

CC.3.5.11-12.G: Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

PA Core Business, Computers, and Information Technology:

CC.15.3.12.D: Evaluate business materials (including web based resources) for value related to purpose, quality, and appropriateness.

CC.15.3.12.E: Evaluate chosen print and electronic resources for advanced research. Reference English Language Arts CC.1.4.11-12.U.

CC.15.3.12.T: Demonstrate application of digital citizenship in work and personal situations. Reference Business, Computer and Information Technologies 15.4.12.B.

CC.15.3.12.U: Critique the effectiveness of various electronic communication options related to desired outcomes.

CC.15.3.12.V: Evaluate how mobile communication impacts businesses or organizations.

CC.15.3.12.W: Collaborate via electronic communication with peers, educators, and/or professionals to meet organizational goals.

CC. 15.4.12.A: Apply the creative and productive use of emerging technologies for educational and personal success.

CC.15.4.12.B: Evaluate the impact of social, legal, ethical, and safe behaviors on digital citizenship.

CC. 15.4.12.C: Develop criteria for analyzing hardware options to meet defined needs.

CC. 15.4.12.D: Evaluate emerging input technologies.

CC. 15.4.12.G: Create an advanced digital project using sophisticated design and appropriate software/applications.

CC. 15.4.12.K: Evaluate advanced multimedia work products and make recommendations based on the evaluation.

PA Career Education & Work
13.11.A: Relate careers to individual interest, abilities, and aptitudes.
13.11.B: Analyze career options based on personal interests, abilities, aptitudes, achievements, and goals.

13.4.11.B: Analyze entrepreneurship as it relates to personal character traits.

ISTE Standards 1-5
ISTE – 1 Creativity and Innovation
Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology**.**
a. Apply existing knowledge to generate new ideas, products, or processes
b. Create original works as a means of personal or group expression
c. Use models and simulations to explore complex systems and issues
d. Identify trends and forecast possibilities

ISTE – 2 Communication and Collaboration
Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
b. Communicate information and ideas effectively to multiple audiences using a variety of media and format

c. Develop cultural understanding and global awareness by engaging with learners of other cultures
d. Contribute to project teams to produce original works or solve problems

ISTE – 3 Research and Information Fluency

Students apply digital tools to gather, evaluate, and use information.
a. Plan strategies to guide inquiry
b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media
c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks
d. Process data and report results

ISTE – 4 Critical Thinking, Problem Solving, and Decision making

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and research.
a. Identify and define authentic problems and significant questions for investigations
b. Plan and manage activities to develop a solution or complete a project
c. Collect and analyze data to identify solutions and/or make informed decisions
d. Use multiple processes and diverse perspectives to explore alternative solutions

ISTE – 5 Digital Citizenship

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
a. Advocate and practice safe, legal, and responsible use of information and technology
b. Exhibit a positive attitude toward using technology that supports collaboration, learning and productivity.
c. Demonstrate personal responsibility for lifelong learning.
d. Exhibit learning for digital citizenship

Anchors:

R11.B.3= Understand concepts and organization of nonfictional text
R11.A.2= Understand nonfiction appropriate to grade level.