

# Cyber Foundations 1 (2020)

## Orientation and Digital Citizenship 1

### 1.1 Identify school policies, program policies, and safety procedures related to Cyber Foundations I. 1.1

- a Examine school handbook, the technology acceptable use policy, and other safety procedures for building level situations. 1.1A
  - b Preview course outline and its relevance in today's workforce. 1.1B
  - c Recognize appropriate safety measures related to technology in the computer lab and online safety. 1.1C
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### 1.2 Investigate social and ethical issues related to Digital Citizenship and Social Media 1.2

- a Media Habits - Identify personal media habits, and how much time is spent with different forms of media. 1.2A
  - b Discuss the pros and cons of social media when used personally, educationally, and professionally 1.2B
  - c Creative Responsibilities – Identify user responsibilities to respect others' creative work 1.2C
  - d Internet Safety – Identify strategies to determine inappropriate contact and positive connections when collaborating online. 1.2D
  - e Online Personalities – Discuss the outcomes of creating different online personalities 1.2E
  - f Cyberbullying – Explore cyberbullying behaviors and how it impacts individuals and communities and discuss the consequences. 1.2F
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### 1.3 Collaborate with teachers, peers, and course material using a learning management system. 1.3

- a Discover online learning environments and how they operate among teachers and students. 1.3A

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**1.4 Compare/contrast career opportunities within the Law, Public Safety, Corrections, and Security career cluster** 1.4

- a Research career opportunities for employment in law, public safety, corrections, and security by exploring the Law, Public Safety, Corrections, and Security career cluster 1.4A
  - b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the Law, Public Safety, Corrections, and Security career cluster. 1.4B
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**Student Organizations** 2      **2.1 Recognize opportunities to participate in student organizations related to technology and business.** 2.1

- a Identify student organizations available at the school for technology and business students. 2.1A
  - b List student competitions available through each organization 2.1B
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**2.2 Recognize how a business meeting is conducted (must be used at least twice)** 2.2

- a Illustrate the opening of a business meeting. 2.2A
  - b Illustrate the closing of a business meeting. 2.2B
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**2.3 Identify leadership and personal development styles** 2.3

- a List the characteristics of an effective leader. 2.3A
  - b Explore the characteristics of personal development 2.3B
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**21st Century Tool Box** 3      **3.1 Differentiate between various learning styles and personality traits found within the classroom and workplace.** 3.1

- a Complete learning styles inventory. 3.1A
  - b Identify personality traits and complete a personality self-test. 3.1B
  - c Discuss strategies people can use to work effectively with one another regardless of personal differences 3.1C
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**3.2 Demonstrate effective time management skills, study skills and note-taking strategies.** 3.2

- a Develop short- and long-term personal goals 3.2A
- b Develop short- and long-term personal goals 3.2B
- c Demonstrate use of technology to master study skills and time management skills. 3.2C

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**3.3 Demonstrate use of technology to master study skills and time management skills.** 3.3

- a Use career planning software to become familiar with the 16 National Career Clusters and the opportunities for employment with each. 3.3A

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**3.4 Complete interest profiler and career exploration exercises.** 3.4

- a Complete career interest survey and log results. 3.4A
- b Explore career options in career cluster(s) of choice. 3.4B

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**3.5 Develop an Individual Success Plan (ISP)** 3.5

- a Link the ISP to the 16 national career clusters and to secondary and postsecondary education. 3.5A
- b Link the ISP to the 16 national career clusters and to secondary and postsecondary education. 3.5B
- c Identify, select, and print courses that meet graduation requirements and reflect the ISP. 3.5C

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**3.6 Demonstrate effective public speaking skills.** 3.6

- a Demonstrate effective communication in groups. 3.6A
- b Demonstrate presentation skills. 3.6B

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**3.7 Demonstrate knowledge of 21st Century skills.** 3.7

- a Demonstrate effective collaboration and teamwork. 3.7A
- b Demonstrate creativity and imagination. 3.7B
- c Utilize critical thinking where appropriate. 3.7C
- d Execute problem solving techniques. 3.7D

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**Keyboarding** 4

**4.1 Demonstrate an understanding of basic keyboarding information.** 4.1

- a Define vocabulary associated with keyboarding. 4.1A
- b Examine keyboarding and workspace ergonomics. 4.1B
- c Investigate various keyboard layouts. 4.1C

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## 4.2 Perform keyboarding applications. 4.2

- a Demonstrate proper hand, finger, and body position when using a keyboard. (ongoing) 4.2A
- b Use correct finger reaches on home row and from home row to top and bottom row keys. (ongoing) 4.2B
- c Perform touch typing by keying words, sentences, and paragraphs. (ongoing) 4.2C
- d Demonstrate speed and accuracy with the touch keyboard. 4.2D
- e Identify basic key functions and keyboard shortcut commands associated with the QWERTY keyboard. 4.2E

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## 4.3 Investigate keyboarding skills and computer science in the context of Business Management and Administration career cluster. 4.3

- a Research career opportunities for employment in Business Management and Administration Career Cluster by exploring the Business Management and Administration Career Cluster. 4.3A
- b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the Business Management and Administration Career Cluster career cluster. 4.3B
- c Discuss how computer science impacts the Business Management and Administration Career Cluster career cluster. 4.3C

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## Word Processing Applications 5

### 5.1 Perform basic word processing applications 5.1

- a Use basic word processing commands to create, format, edit, and print basic documents. 5.1A
- b Apply word processing features using appropriate ribbons to perform additional formatting tasks. 5.1B
- c Manage and manipulate files within a word processing application. 5.1C

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### 5.2 Generate documents using word processing applications. 5.2

- a Explore reports written in various formatting styles, such as APA and MLA. 5.2A
- b Cite references in various citation formats. 5.2B
- c Use various research tools to create a research paper in a school-preferred formatting style. 5.2C
- d Create business correspondence, such as letters and emails, using proper business/industry formatting techniques. 5.2D

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### 5.3 Perform desktop publishing tasks 5.3

- a Distinguish between high- and low-quality desktop publishing documents (flyers, newsletters, brochures, etc.). 5.3A
  - b Create and manipulate basic desktop publishing features (lines, shapes, clipart, Smart Art, columns, tables, text boxes, etc.). 5.3B
  - c Manipulate graphics and objects by moving, sizing, grouping, and changing order and/or color. 5.3C
  - d Create effective desktop publishing documents (flyers, newsletters, brochures, etc.) 5.3D
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### 5.4 Investigate career opportunities in the Hospitality and Tourism career cluster 5.4

- a Research career opportunities for employment in Hospitality and Tourism career cluster by exploring the Hospitality and Tourism career cluster. 5.4A
  - b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the Hospitality and Tourism career cluster. 5.4B
  - c Discuss how computer science impacts the Hospitality and Tourism career cluster 5.4C
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## Spreadsheet Applications and Financial Literacy 6

### 6.1 Organize personal finances and use a budget to manage cash flow, plan for spending, and save for future goals. 6.1

- a Develop a plan for spending and saving. 6.1A
  - b Describe how to use different payment methods. 6.1B
  - c Apply consumer skills to spending and saving decisions 6.1C
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### 6.2 Use a career plan to develop personal income potential. 6.2

- a Explore job and career options. . 6.2A
  - b Compare sources of personal income and compensation 6.2B
  - c Analyze factors that affect net income. 6.2C
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### 6.3 Apply reliable information and systematic decision making to personal financial decisions. 6.3

- a Recognize the responsibilities associated with personal financial decisions. 6.3A
- b Use reliable resources when making financial decisions. 6.3B
- c Make criterion-based financial decisions by systematically considering alternatives and consequences. 6.3C
- d Control personal information. 6.3D
- e Use a personal financial plan. 6.3E

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**6.4 Perform spreadsheet applications.** 6.4

- a Explore spreadsheet software purpose and functions. 6.4A
- b Identify terminology and key features including navigation related to spreadsheets. 6.4B
- c Use basic spreadsheet formulas, functions, format and edit commands (sort, filter, edit, format, insert, delete, etc.). 6.4C
- d Create and manipulate a spreadsheet in meaningful situations. 6.4D

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**6.5 Develop and interpret spreadsheet tables, charts, and figures to support written and oral communication.** 6.5

- a Create spreadsheet tables, charts, and figures to support (data) written and oral communication. 6.5A
- b Interpret spreadsheet tables, charts, and figures used to support (data) written and oral communication 6.5B

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**6.6 Investigate career opportunities in the Finance career cluster.** 6.6

- a Research career opportunities for employment in Finance career cluster by exploring the Finance career cluster. 6.6A
- b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the Finance career cluster. 6.6B
- c Discuss how computer science impacts the Finance career cluster 6.6C

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**Graphic Design and  
Multimedia  
Presentations** 7**7.1 Recognize the purposes of graphic design applications.** 7.1

- a Identify terminology used with graphic design applications. 7.1A
- b Differentiate types of graphic design projects and their purposes. 7.1B
- c Identify different types of graphic design software. 7.1C
- d Identify the basic components of a graphic design application screen. e. Identify legal issues related to graphic design. 7.1D
- e Identify legal issues related to graphic design. 7.1E

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**7.2 Demonstrate the proper use of graphic design applications.** 7.2

- a Differentiate rules of design concepts, such as the rules of thirds. 7.2A
- b Generate and manipulate graphics in common graphic design applications. 7.2B
- c Create design elements for physical products, such as a business card, letterhead, brochure, magazine cover, and so forth. 7.2C

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### **7.3 Demonstrate basic multimedia presentation applications** 7.3

- a Demonstrate basic multimedia presentation applications 7.3A
  - b Define terminology associated with multimedia presentations. Demonstrate basic features of multimedia presentation software. 7.3B
  - c Investigate the different types of available multimedia software. 7.3C
  - d Demonstrate basic features of multimedia presentation software. 7.3D
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### **7.4 Create a multimedia presentation.** 7.4

- 4a. Plan a multimedia presentation using proper guidelines using one of the presentation programs presented in this unit. Present a multimedia presentation to an audience. 7.4A
  - 4b. Define and identify the equipment needed to present multimedia presentations. 7.4B
  - 4c. Create a professional-quality multimedia presentation. 7.4C
  - 4d. Present a multimedia presentation to an audience. 7.4D
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### **7.5 Investigate career opportunities in the Arts, Audio/Video Technology and Communications career cluster.** 7.5

- a Research career opportunities for employment in Arts, Audio/Video Technology and Communications career cluster by exploring the Arts, Audio/Video Technology and Communications career cluster. Discuss how computer science impacts the Arts, Audio/Video Technology and Communications career cluster 7.5A
  - b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the Arts, Audio/Video Technology and Communications career cluster. 7.5B
  - c Discuss how computer science impacts the Arts, Audio/Video Technology and Communications career cluster 7.5C
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## **Problem Solving** 8

### **8.1 Investigate the problem-solving process.** 8.1

- a Communicate and collaborate with classmates in order to solve a problem. 8.1A
- b Iteratively improve a solution to a problem 8.1B
- c Identify different strategies used to solve a problem, 8.1C
- d Identify the four steps of the problem-solving process. 8.1D
- e Given a problem, identify individual actions that would fall within each step of the problem solving process. 8.1E
- f Identify useful strategies within each step of the problem-solving process. 8.1F
- g Apply the problem-solving process to approach a variety of problems. 8.1G
- h Assess how to define the problem more precisely. 8.1H

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## 8.2 Differentiate between computer components and processes. 8.2

- a Identify a computer as a machine that processes information. 8.2A
- b Provide a high-level description of the different parts of the Input - Output - Store - Process model of a computer. 8.2B
- c Identify the inputs and outputs of common computing devices. 8.2C
- d Select the inputs and outputs used to perform common computing tasks. 8.2D
- e Develop, articulate, and implement a method for processing information based on given constraints. 8.2E
- f Evaluate the effectiveness of multiple methods for solving an information processing problem. 8.2F
- g Provide examples of common types of information that is stored on a computer. 8.2G
- h Explain the need for storage as part of processing information with a computer. 8.2H
- i Develop an algorithm that incorporates storage considerations. 8.2I

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## 8.3 Evaluate, analyze, and collaborate to design a web app. 8.3

- a a. Evaluate the information an app would need to be provided as input in order to produce a given output. 8.3A
- b Identify and define a problem that could be solved using computing. 8.3B
- c Design a prototype of an app (on paper) that inputs, outputs, stores, and processes information in order to solve a problem. 8.3C
- d Provide and incorporate targeted peer feedback to improve a computing artifact. 8.3D

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## 8.4 Investigate career opportunities in the STEM career cluster. DOK 3 a. b. c. 8.4

- a Research career opportunities for employment in STEM career cluster by exploring the STEM career cluster. 8.4A
- b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the STEM career cluster. 8.4B
- c Discuss how computer science impacts the STEM career cluster (data scientist or other scientist, cybersecurity, engineer, computer hardware or software engineer). 8.4C

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## Web Development 9

### 9.1 Identify the purpose of a website. 9.1

- a Identify the reasons someone might visit a given website. 9.1A
- b Identify the reasons someone might create a given website. 9.1B
- c Identify websites as a form of personal expression. 9.1C

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## 9.2 Examine the use of HTML and common tags. 9.2

- a Explain that HTML allows a programmer to communicate the way content should be structured on a web page. 9.2A
- b Write a simple HTML document that uses opening and closing tags to structure content. 9.2B
- c Use heading tags to change the appearance of text on a web page. 9.2C
- d Structure content into headings, subheadings, and paragraphs. 9.2D
- e Use the <ul>, <ol>, and <li>tags to create ordered and unordered lists in an HTML page. 9.2E
- f Describe why using whitespace, indentation, and comments makes your code easier to maintain. 9.2F

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## 9.3 Describe Digital Footprint and how it is created. 9.3

- a Understand why and explain reasons that it is difficult to control who sees information published online. 9.3A

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## 9.4 Identify and use Intellectual Property and Images appropriately. 9.4

- a Explain the purpose of copyright. 9.4A
- b Identify the rights and restrictions granted by various Creative Commons licenses. 9.4B
- c Add an image to a web page. 9.4C

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## 9.5 Investigate Sources and Search Engines. 9.5

- a Use basic web searching techniques to find relevant information online. 9.5A

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## 9.6 Demonstrate the use of CSS within an HTML document. 9.6

- a Use CSS selectors to style HTML text elements. 9.6A
- b Create and link to an external style sheet. 9.6B
- c Explain the differences between HTML and CSS in both use and syntax. 9.6C
- d Use CSS properties to change the size, position, and borders of elements. 9.6D
- e Create a CSS rule-set for the body element that impacts all elements on the page. 9.6E
- f Group elements using classes in order to create more specific styles on their website. 9.6F
- g Apply the RGB color function to add custom colors to their website 9.6G

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### 9.7 Investigate career opportunities in the STEM cluster. 9.7

- a Research career opportunities for employment in STEM (programmer, web developer, networking) by exploring the STEM career cluster. 9.7A
  - b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the STEM (programmer, web developer, networking) career cluster. 9.7B
  - c Discuss how computer science impacts the STEM (programmer, web developer, networking) career cluster. 9.7C
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## Introduction to Block-based Programming 10

### 10.1 Investigate how programming is used to solve problems. 10.1

- a Identify how Computer Science/coding is used in a variety of fields to solve problems. 10.1A
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### 10.2 Investigate the use of objects/sprites in gaming and animation. 10.2

- a Demonstrate understanding of coding tool by labeling areas of screen (i.e. toolbox, workspace, preview stage, sprite list). 10.2A
  - b Describe the type of commands found in the toolbox categories (i.e. motion, looks, sound, events, control, sensing, etc.). 10.2B
  - c Create a static scene with at least 1 sprite. 10.2C
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### 10.3 Investigate the use of Looks and Sounds commands. 10.3

- a Create an animation with 2 sprites/objects that speak and change costumes. 10.3A
  - b Demonstrate proper use of the Show and Hide blocks. 10.3B
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### 10.4 Demonstrate the use of movement in gaming and animation. 10.4

- a Use a movement command to increment or decrement sprite positioning. 10.4A
  - b Explain the best use of at least 3 types of movement blocks. 10.4B
  - c Use the rotation blocks to create and change sprite movements. 10.4C
  - d Demonstrate how to set objects/sprites back to original starting positions. 10.4D
  - e Create an animation using colors, sizes, movement, and dialog. 10.4E
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### 10.5 Investigate the use of event blocks in gaming and animation. 10.5

- a Identify different ways to start animations. 10.5A
- b Create an animation that uses at least 2 different Event blocks. 10.5B

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**10.6 Apply the use of control blocks in gaming and animation.** 10.6

- a Explain what an animation is and how it creates the illusion of smooth motion. 10.6A
- b Explain how a loop allows for the creation of animations. 10.6B
- c Correctly use a wait block for timing in dialogs and movements. 10.6C
- d Use a loop to make simple animations. 10.6D

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**10.7 Demonstrate ability to identify and correct programming errors.** 10.7

- a Reason about and fix common errors encountered when programming 10.7A
- b Debug code written by others 10.7B
- c Read and follow the steps of a short program written in pseudocode 10.7C

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**10.8 Investigate career opportunities in the STEM (i.e. game designer, computer program, or mathematics) career cluster.** 10.8

- a Research career opportunities for employment in STEM career cluster by exploring the STEM (game designer, computer programmer, or mathematics) career cluster. 10.8A
- b Examine the requirements, skills, wages, education, and employment opportunities in at least one career pathway from the STEM (game designer, computer programmer, or mathematics) career cluster. 10.8B
- c Discuss how computer science impacts the STEM (game designer, computer programmer, or mathematics) career cluster. 10.8C