Mississippi CTE

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

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

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

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

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

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

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

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

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

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

3.6 Demonstrate effective public speaking skills. 3.6

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

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

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

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

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e Identify basic key functions and keyboard shortcut commands associated with the QWERTY keyboard. 4.2E

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

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

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

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

5.4 Investigate career opportunities in the Hospitality and Tourism career cluster 5.4

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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

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

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

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

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

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

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

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

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

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

7.5 Investigate career opportunities in the Arts, Audio/Video Technology and Communications career cluster. 7.5

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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

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

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

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

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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

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

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

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 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

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

9.4 Identify and use Intellectual Property and Images appropriately. 9.4

a Explain the purpose of copyright. 9.4A

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b Identify the rights and restrictions granted by various Creative Commons licenses. 9.4B

c Add an image to a web page. 9.4C

9.5 Investigate Sources and Search Engines. 9.5

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

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

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

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

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

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

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

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

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

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