CARERR AND TECHNICAL EDUCATION (CTE)

10-12/
WEB DESIGN AND DEVELOPMENT III

BOARD APPROVAL DATE: September 2020

BOARD ADOPTION OF STATE STANDARDS: September 2020

Unit Overview (Standards Coverage)				
Unit	**Standards**	**Unit Focus**	**Skills Overview**	**Suggested Pacing**
Unit 1	• 8.1.12.A.1 • 8.2.12.E.4 • 8.2.12.C.1 • 8.1.12.D.5 • CRP6	**Advanced HTML Design**	• Classes • Ids • Color Design • Element Positioning • Merging Table Cells • Styling Navigation Bars • Embedding Media	**5-8 weeks**
Unit 2	• 8.2.12.E.3 • 8.2.12.E.4 • 8.2.12.C.1 • 8.1.12.A.3 • 8.1.12.D.1 • 9.3.IT- WD.1 • 9.3.IT- WD.2 • 9.3.IT- WD.3	**Design Technologies**	• WYSIWYG editors • Design Applications • WordPess Site Setup • Managing WordPress Content • Visual Web Editors • Images, Tables & Style Sheets • The Style Sheet Properties Panel • Using Web Templates • SVG Vector Graphics	**5-7 weeks**

This document outlines in detail the answers to following four questions:

1. **What do we want our students to know?**
2. **How do we know if they learned it?**
3. **What do we do if they did not learn it?**
4. **What do we do when they did learn it?**

Unit 1- Advanced HTML Design CTE 9-12 Web Design I		
Content & Practice Standards	**Interdisciplinary Standards for ELA Practice**	**Critical Knowledge & Skills**
• **8.1.12.A.1-** Understand and use technology systems. • **8.2.12.E.4-** Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements). • **8.2.12.C.1-** Explain how open source technologies follow the design process. • **8.1.12.D.1-** Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work. • **8.1.12.D.5-** Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs. • **8.1.12.A.3** Participate in online courses, learning communities, social networks, or virtual worlds and recognize them as resources for lifelong learning. • **8.1.12.D.1** Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work. • **CRP2.-** Apply appropriate academic and technical skills • **CRP6.** Demonstrate creativity and innovation • **CRP11**. Use technology to enhance productivity	• **RST.9-10.2. Determine the central ideas, themes, or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.** • **RST.9-10.5. Analyze the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).** • **RST.11-12.2. determine the central ideas, themes, or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.**	• Working with Dreamweaver • Web Documents • Image Navigation Features • Using Templates • Spry Widgets • Automated Style Sheets
Unit 1 Advanced HTML Design 9-12/Web Design I		
Stage 1 – Desired Results		
UNIT SUMMARY	**CORE AND SUPPLEMENTAL MATERIALS/RESOURCES (OPEN RESOURCES)**	

Students will use previous knowledge gained in Unit 3 and apply it with more advanced concepts such as classes, Ids, color design, element positioning, merging table cells, styling navigation bars, and embedding media.	• Core Materials:
	  ○ IE Class
	  ○ Ultimate Fitness Web Design Simulation
	• Open Resources:
	  ○ Washington Web Design & Development I
	  ○ The Webby Awards
	  ○ The Best Designs
	  ○ Web Style Guide: Visual Design
	  ○ Wikipedia: Web Colors
	  ○ WebAIM: Color Blindness
	  ○ A Brief History of HTML
	  ○ Web Style Guide
	  ○ W3Schools HTML Tutorial
	  ○ https://www.w3.org/TR/html5/
	  ○ Code Avengers
	  ○ Code Academy
	  ○ 50 Totally Free Lessons in Graphic Design Theory
	  ○ http://www.doit.wisc.edu/accessibility/video/web-applications.aspx: Web Application Accessibility from University of Wisconsin-Madison

UNDERSTANDINGS

- Features in Adobe Dreamweaver
- Templates in Adobe Dreamweaver
- Code and design view in Adobe Dreamweaver
- Utilization of the Dreamweaver Style Sheet tools for creating Embedded and External Style Sheets

Students will know…	**Students will be able to…**
• How to apply CSS to a variety of HTML elements • How to use an external style sheet, and linked to it from within their web pages • How to use various tools that are available to help select colors for web pages. • How to identify a few basic colors, including black and white, by their hexadecimal codes • How to add ID and Class attributes to certain elements within a web page • How to stylize a class of elements using CSS • How to use a variety of CSS properties to make an unordered list look like a navigation menu	• Apply CSS to a variety of HTML elements. • An external style sheet, and linked to it from within their web pages. • Use various tools that are available to help select colors for web pages. • Identify two methods for expressing color in CSS. • Identify a few basic colors, including black and white, by their hexadecimal codes • Implement a color scheme on a web site using CSS to define background and font colors for HTML elements. • Identify four guidelines for using typography effectively on web pages.

	● Evaluate several web pages on whether they effectively follow the web design guidelines. ● Identify whether a font is serif, sans-serif, or another font family. ● Make informed decisions about which font families to use on a website, based in part on the likelihood that these fonts will be installed on users' computers. ● Define the typography of a site by setting the font-family, font-size, font-weight, line-height, text-align, and letter-spacing properties in CSS. ● Identify the difference between margin, border, and padding in CSS. ● Add margins, borders, and paddings to HTML elements using CSS. ● Identify how ID attributes are used in CSS to enable styling of individual elements. ● Identify how Class attributes are used in CSS to enable styling of groups of elements. ● Add ID and Class attributes to certain elements within a web page. ● Stylize a class of elements using CSS. ● Stylize an individual HTML element using its ID. ● Use the :hover, :focus, and :active CSS pseudo-classes to a web page to help the user track their current position on the page. ● Use the :first-letter pseudo-class to distinctly stylize the first letter of a block of text. ● Demonstrate a basic understanding of CSS positioning principles. ● Apply CSS positioning to align elements into two columns on your web page. ● Position elements using both relative and absolute positioning. ● Use a variety of CSS properties to make an unordered list look like a navigation menu.
Stage 2 – Assessment Evidence	
Performance Tasks: ● Design Portfolio Project 3: The second project will focus on developing a quality tutorial website on how to do something according to specific guidelines. The focus on CSS Classes, IDs and page layout will also be emphasized using the absolute and relative positioning techniques. Advanced color application,	**Alternate Assessments**: ● Independant Website Project ● Club Website Contest Project ● Wix vs. Dreamweaver Independent Project ● Adobe Dreamweaver How to Manual Project ● Create a Website for the Community, School Club, or School Faculty Member

such as gradients will also be required. Students will plan their topic, page, and site design.

- Design Portfolio Project 4: The third project will bring together all the design elements and techniques introduced in Units 3 and 4 with a focus on designing navigation bars, media, and applying effects from lessons 6, 7, and 9 into their site. Students will develop a travel website about a country while adhering to specific guidelines. They will be required to plan the site and research specific information about their assigned country.
- Labs
    - Each lab will be tailored to the content of each module and will be a hands on exercise for the students to complete.

Stage 3 – Learning Plan

This unit expands knowledge gained in unit 3(In Web Design II) on HTML and CSS and covers advanced concepts in HTML. Most of the modules in this should be started with a "hook" question as a do now. Pre Assessments may be given informally such as in an anonymous poll or formally such as using a google form quiz in order to judge student knowledge and change the activities to student's current levels. Assessments may be given formally such as a graded quiz or test or informally such as an exit ticket. Below is a list of suggested topics to cover in this unit with accompanying activities.

- Module 1-**CSS Class & IDs:** Students will learn how classes are and how to apply them, as well as the benefits to using classes. Students will also learn about IDs, and how and when they are applied to their web documents.
- Activities:
    - Lesson 1 Worksheet-CSS Classes & IDs
    - Guided Practice
    - Lab 1-1
    - Lab 1-2
    - Lab 1-3
    - Lab 1-4
    - Lab 1-5
    - Challenge Lab 1- Students will use prior knowledge to complete code simulation
- Module 2-**Color Design:** This lesson will teach students how to take control over the color presentation on their web sites. They will learn about the RGB color system, how to set transparent background colors, and how to set gradient backgrounds to their elements.
    - Activities:
        - Lesson 2 Worksheet- Color Design
        - Guided Practice
        - Lab 2-1
        - Lab 2-2
        - Lab 2-3
        - Lab 2-4
        - Challenge Lab 2- Students will use prior knowledge to complete code simulation

- Module 3- **Element Positioning with CSS:** Students will learn how to control the layout and positioning of their elements using style sheets. Students will learn about absolute and relative positioning of and setting the left, right, and top offset to define specific a specific placement of their content.
    - Activities:
        - Lesson 3 Worksheet- Element Positioning
        - Guided Practice
        - Lab 3-1
        - Lab 3-2
        - Lab 3-3
        - Lab 3-4
        - Lab 3-5
        - Challenge Lab 3- Students will use prior knowledge to complete code simulation
- Module 4- **Merging Table Cells:** Advanced data table design techniques will be introduced. Students will learn to merge table cells across columns and rows using colspan and rowspan.
    - Activities:
        - Lesson 4 Worksheet- Merging Table Cells
        - Guided Practice
        - Lab 4-1
        - Lab 4-2
        - Lab 4-3
        - Lab 4-4
        - Challenge Lab 4- Students will use prior knowledge to complete code simulation
- Module 5- **Styling Navigation Bars:** This lesson will teach students how to convert an inline element into a block element. Students will also learn how to create custom horizontal and vertical navigation bars from ordinary links.
    - Activities:
        - Lesson 5 Worksheet- Styling Navigation Bars
        - Guided Practice
        - Lab 5-1
        - Lab 5-2
        - Lab 5-3
        - Lab 5-4
        - Challenge Lab 5- Students will use prior knowledge to complete code simulation
- Module 6- **Embedding Media:** Students will be introduced to the audio and video elements with THML5. Students will also learn about the various types of media files and browser limitations, and how to embed audio and video files into their web pages.
    - Activities:
        - Lesson 6 Worksheet- Embedding Media
        - Guided Practice
        - Lab 6-1
        - Lab 6-2
        - Lab 6-3
        - Lab 6-4
        - Challenge Lab 6- Students will use prior knowledge to complete code simulation
- Module 7- **Transforming and Transitioning Elements:** This lesson will show students how to modify an elements shape and placement. Students will learn how to rotate elements on the page, how to skew elements horizontally and vertically, and how to scale an element. Students will also learn how to animate the transition from one form to another
    - Activities:

        - Lesson 7 Worksheet- Transforming Elements
        - Guided Practice
        - Lab 7-1
        - Lab 7-2
        - Lab 7-3
        - Lab 7-4
- Module 8- **Filter Effects:** Students will learn about the filters available in CSS 3 and how to apply them to modify and/or distort their page elements.. Alternatives to using filters are also discussed when available.
    - Activities:
        - Lesson 8 Worksheet- - Filter Effects
        - Lab 8-1
        - Lab 8-2
        - Lab 8-3
        - Lab 8-4

Planned Differentiation & Interventions for Tiers I, II, III, ELL, 504s, SPED, and Gift & Talented Students

Below are different categories of student levels: tiers I, II, III, ELL, 504s, SPED, and gift & talented students. Each category has different modifications listed for the students needs in this unit..

Gifted & Talented:
Depending on the current module students may conduct an independent research project,move on to advanced HTML and CSS modules independently, work on independent website design for faculty or school clubs.

Tier I:
Depending on the current module students may conduct an independent research project,move on to advanced HTML and CSS modules independently, work on independent website design for faculty or school clubs.

Tier II:
Students may be given extra resources such as corrected notes, infographics, videos on related topics, study guides and graphic organizers. Students may also use W3Schools online tutorials as a resource when needed.

Tier III:
The module will be retaught with extra focus on areas of difficulty and the teacher may include extra resources such as corrected notes, infographics, videos on related topics, study guides and graphic organizers. Students may also use W3Schools online tutorials as a resource when needed. The use of fill in the blank code and coding partners may also be implemented..

ELL:
Students may be grouped heterogeneously and may be given extra resources such as corrected notes, infographics, videos on related topics, study guides, access to Google translate, Google Narrative, and graphic organizers.

504s: Accommodations will be provided according to the student's 504 plan. Examples are preferential seating, extra time to complete assignments and quizzes, read quiz aloud, copy of notes, videos on related topics, and graphic organizers. Students may also use W3Schools online tutorials as a resource when needed. The use of fill in the blank code and coding partners may also be implemented..
SPED: Accommodations will be provided according to the student's IEP. Examples are preferential seating, extra time to complete assignments and quizzes, read quiz aloud, copy of notes, videos on related topics, and graphic organizers. Students may also use W3Schools online tutorials as a resource when needed. The use of fill in the blank code and coding partners may also be implemented.

Unit 2- Design Technologies CTE 9-12 Web Design I		
Content & Practice Standards	**Interdisciplinary Standards for ELA Practice**	**Critical Knowledge & Skills**
• **8.1.12.A.1-** Understand and use technology systems. • **8.2.12.E.4-** Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements). • **8.2.12.C.1-** Explain how open source technologies follow the design process. • **8.1.12.D.1-** Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work. • **8.1.12.D.5-** Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs. • **8.1.12.A.3** Participate in online courses, learning communities, social networks, or virtual worlds and recognize them as resources for lifelong learning. • **8.1.12.D.1** Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work. • **CRP2.-** Apply appropriate academic and technical skills • **CRP6.** Demonstrate creativity and innovation • **CRP11**. Use technology to enhance productivity	• **RST.9-10.2. Determine the central ideas, themes, or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.** • **RST.9-10.5. Analyze the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).** • **RST.11-12.2. Determine the central ideas, themes, or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.**	• **WYSIWYG editors** • **Design Applications** • **WordPess Site Setup** • **Managing WordPress Content** • **Visual Web Editors** • **Images, Tables & Style Sheets** • **The Style Sheet Properties Panel** • **Using Web Templates** • **SVG Vector Graphics**

Unit 1 Advanced HTML Design 9-12/Web Design I	
Stage 1 – Desired Results	
UNIT SUMMARY	**CORE AND SUPPLEMENTAL MATERIALS/RESOURCES (OPEN RESOURCES)**
This unit will introduce students to some of the technologies used in modern web design, such as content management systems, including Word Press, and	• Core Materials: ○ IE Class

WYSIWYG editors, where they will learn to create web sites using a visual editor from scratch, as well as from commercial templates. Students will also be introduced to SVG vector graphics and they will learn how they work and how to incorporate them into their web pages.	○ BlueGriffon (Free Version) ○ WordPress(Free Version) ● Open Resources: ○ Washington Web Design & Development I ○ The Webby Awards ○ The Best Designs ○ Web Style Guide: Visual Design ○ Wikipedia: Web Colors ○ WebAIM: Color Blindness ○ A Brief History of HTML ○ Web Style Guide ○ W3Schools HTML Tutorial ○ https://www.w3.org/TR/html5/ ○ Code Avengers ○ Code Academy ○ 50 Totally Free Lessons in Graphic Design Theory ○ http://www.doit.wisc.edu/accessibility/video/web-applications.aspx: Web Application Accessibility from University of Wisconsin-Madison

UNDERSTANDINGS

- **WYSIWYG editors**
- **Design Applications**
- **WordPess Site Setup**
- **Managing WordPress Content**
- **Visual Web Editors**
- **Images, Tables & Style Sheets**
- **The Style Sheet Properties Panel**
- **Using Web Templates**
- **SVG Vector Graphics**

Students will know…	**Students will be able to…**
● Compare and contrast online Software as a Service (SaaS), content management systems (CMS), open source software, and visual editors ● How to remove and add pages to a WordPress site, create and edit menus, edit template components, and set site privacy settings. ● How to edit the content on their WordPress site, how to add and remove components, as well as images, widgets, as well miscellaneous elements. ● How to define WYSIWYG editors and discuss their pros and cons.	● Compare and contrast online Software as a Service (SaaS), content management systems (CMS), open source software, and visual editors ● Remove and add pages to a WordPress site, create and edit menus, edit template components, and set site privacy settings. ● Edit the content on their WordPress site, how to add and remove components, as well as images, widgets, as well miscellaneous elements. ● Define WYSIWYG editors and discuss their pros and cons. ● Use and customize web templates in creating website for personal use and for clients.

● How to use and customize web templates in creating website for personal use and for clients	● Plan and develop a business website on a fictional company

Stage 2 – Assessment Evidence

Performance Tasks: **Design Portfolio Project 5:** Upon completion of the Design Technologies unit, Project 5 should be assigned. Students will plan and develop a business website on a fictional company. They will be provided with specific requirements for the site and they must plan their page and site design, as well as determine the information the target audience will most likely be seeing from the website. The teacher can have the students complete the project as a WordPress site or select from a predesigned template for use in BlueGriffon. The teacher will be provided with two grading rubrics for this project, one for the WordPress version and one for BlueGriffon.	**Alternate Assessments**: ● Independant Website Project ● Club Website Contest Project ● Wix vs. Dreamweaver Independent Project ● Adobe Dreamweaver How to Manual Project ● Create a Website for the Community, School Club, or School Faculty Member

Stage 3 – Learning Plan

Unit 1 introduces students to some of the technologies used in modern web design, such as content management systems, including Word Press, and WYSIWYG editors, where they will learn to create web sites using a visual editor from scratch, as well as from commercial templates. Students will also be introduced to SVG vector graphics and they will learn how they work and how to incorporate them into their web pages.

- Module 1-**Design Applications:** This lesson will introduce students to the various applications used in web design in today's world beyond text editors. Topics include online Software as a Service (SaaS), content management systems (CMS), open source software, and visual editors.
- Activities:
    - Lesson 1 Worksheet-Design Applications
- Module 2- **WordPess Site Setup:** WordPress is the most popular open source content management system used in web development industry. Students will create a free account with WordPress, learn to remove and add pages to a WordPress site, create and edit menus, edit template components, and set site privacy settings**.**
    - Activities:
        - Guided Practice
        - Lab 2-1
        - Lab 2-2
- Module 3- **Managing WordPress Content:** This lesson will pick up where Lesson 2 left off. Student will learn how to edit the content on their WordPress site, how to add and remove components, as well as images, widgets, as well miscellaneous elements.

- Activities:
  - Guided Practice
  - Lab 3-1
  - Lab 3-2

- Module 4- **Visual Web Editors: Students will be introduced to developing web sites in the WYSIWYG environment and of the BlueGriffon visual editor interface.**
  - Activities:
    - Guided Practice
    - Lab 4-1
    - Lab4-2
- Module 5- **Images, Tables & Style Sheets:** This lesson will introduce students to using a WYGIWYG editor to insert images, create tables, and for defining style rules. Students will gain an understanding of the benefits and of both the WYSIWYG editor as well as that of hand coding
  - Activities:
    - Guided Practice
    - Lab 5-1
    - Lab 5-2
- Module 6- **The Style Sheet Properties Panel:** This lesson will expand on the Style Sheet automation features of BlueGriffon. Students will use the Style Sheet properties Panel to define style properties for their web sits.
  - Activities:
    - Guided Practice
    - Lab 6-1
    - Lab 6-2.
- Module 7- **Using Web Templates:** Students will learn how to use and customize web templates in creating website for personal use and for clients.
  - Activities:
    - Guided Practice
    - Lab 7-1

- Lab 7-2

- Module 8- **SVG Vector Graphics:** Students will be introduced to the technology behind vector graphics, and learn how to create, edit, and import them into their web pages.
    - Activities:
        - Guided Practice
        - Lab 8-1
        - Lab -2

- **Design Portfolio Project 5**:
    - Upon completion of the Design Technologies unit, Project 5 should be assigned. Students will plan and develop a business website on a fictional company. They will be provided with specific requirements for the site and they must plan their page and site design, as well as determine the information the target audience will most likely be seeing from the website. The teacher can have the students complete the project as a WordPress site or select from a predesigned template for use in BlueGriffon. The teacher will be provided with two grading rubrics for this project, one for the WordPress version and one for BlueGriffon.

*Prior to starting this unit, BlueGriffon should be installed on each student computer. BlueGriffon can be freely downloaded and installed from www.bluegriffon.org.

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