



WEB PAGE DESIGN CURRICULUM

Middle Township Public Schools

216 S. Main Street

Cape May Court House, NJ 08210

Born On Date: January 17, 2019

Unit of Study: The World Wide Web HTML Basics	The World Wide Web Week 1 (1 Week)	HTML Basics Weeks 2 to 7 (5 Weeks)
STAGE 1 DESIRED RESULT		
Established Goals: NJSLS: (include technology and 21 st century standards)	<p style="text-align: center;"><i>Technology</i></p> 8.1.12.A.2 8.1.12.D.1 8.1.12.D.4 8.1.12.F.2 <p style="text-align: center;"><i>21st Century Life and Careers</i></p> 9.1.12.A.1 9.1.12.F.2 <p style="text-align: center;"><i>Career Ready Practices</i></p> CRP1. - CRP12	<p style="text-align: center;"><i>Technology</i></p> 8.1.12.A.2 8.1.12.A.4 8.1.12.D.2 8.1.12.F.2 8.2.12.A.1 8.2.12.F.1 <p style="text-align: center;"><i>21st Century Life and Careers</i></p> 9.1.12.A.1 9.1.12.F.2 <p style="text-align: center;"><i>Career Ready Practices</i></p> CRP1. - CRP12.
Enduring Understandings: (students will understand..) foster inquiry, understanding, and transfer of learning?)	1. Tim Berners-Lee invented the World Wide Web in 1989. Tim Berners-Lee specified the three fundamental technologies that remain the foundation of today’s Web (and which you may have seen appear on parts of your Web browser): <ol style="list-style-type: none"> a. HTML: HyperText Markup Language. The publishing format for the Web, including the ability to format documents and link to other documents and resources. b. URI: Uniform Resource Identifier. A kind of “address” that is unique to each resource on the Web. c. HTTP: Hypertext Transfer Protocol. Allows for the retrieval of linked resources from across the Web. 	<ol style="list-style-type: none"> 1. HTML is the standard markup language for creating Web pages. 2. HTML stands for Hyper Text Markup Language. 3. HTML describes the structure of Web pages using markup. 4. HTML elements are the building blocks of HTML pages. 5. HTML elements are represented by tags. One must recognize and correct HTML code errors in order to create an HTML site.

	<p>2. A protocol is a well-defined set of rules for how one program communicates with another. This is all of the information that can be contained on the first line of the message. If there is anything else on the line it may confuse the server, or the server may just ignore it. This line is called the request line. What follows the request line are a series of lines called the headers. There may be just one header or there may be many.</p>	
<p>Essential (Guiding) Questions: (What provocative questions will foster inquiry, understanding, and transfer of learning?)</p>	<ol style="list-style-type: none"> 1. How did the writing of the first Web page editor/browser (“WorldWideWeb”) and the first Web server (“httpd”) by Tim Berners-Lee change the world? 2. What role does a protocol play in HTTP format? 	<ol style="list-style-type: none"> 1. Do most opening tags have a closing tag? 2. Why does our finish product render differently on different browsers? 3. When creating a site, would it be helpful to create a page template? Why? 4. What are the benefits of using tables as layouts?

STAGE 2 EVIDENCE

<p>Assessments & Evidence: (Through what authentic performance tasks will students demonstrate the desired understandings?) (By what criteria will performance of understanding be judged?)</p>	<p><i>Formative Assessments</i> Online Lab/Practice Benchmarks Exit Tickets Open-ended responses Class discussions Writing assessed through use of rubrics Classwork/Homework Cooperative Group/Pair activities</p> <p><i>Summative Assessments</i> Written assessments Projects and Multimedia presentations Simulation Project Unit assessment Semester cumulative exam/assessment</p>	<p><i>Formative Assessments</i> Online Lab/Practice Benchmarks Exit Tickets Open-ended responses Class discussions Writing assessed through use of rubrics Classwork/Homework Cooperative Group/Pair activities</p> <p><i>Summative Assessments</i> Written assessments Projects and Multimedia presentations Simulation Project Unit assessment Semester cumulative exam/assessment</p>
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STAGE 3 LEARNING PLAN

<p>Learning Activities: (What specific activities will students do and what skills will students know as a result of the unit?)</p>	<ol style="list-style-type: none"> 1. Demonstration and practice 2. Creation and management of files and paths. 3. Utilize the elements of HTML code through the use of a text editor 4. Manipulation of HTML code 	<ol style="list-style-type: none"> 1. Utilize common HTML tags and how they function. 2. Develop tables to present tabular data to users. 3. Use structure and syntax of a <form>and the many elements that populate it to incorporate into a website.
<p>Resources:</p>	<ol style="list-style-type: none"> 1. E-Book: Fundamentals of Web Programming 2. Google Docs 3. Google Classroom 	<ol style="list-style-type: none"> 1. Online Lab: Khan Academy, Computer Programming Class 2. Online Lab: Codecademy 3. E-book: Fundamentals of Web Programming 4. Google Docs 5. Google Classroom
<p>Interdisciplinary Connections: (e.g. writing, literacy, math, science, history, 21st century life and careers, technology)</p>	<ul style="list-style-type: none"> ◇ <i>Project based learning</i> ◇ <i>Multimedia presentations</i> ◇ <i>Conclusion and analysis of exploratory activities Career exploration</i> <p><u>Science</u> Asking questions and defining problems: Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. (MS-ETS1-1)</p> <p><u>Developing and Using Models:</u> Modeling Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</p> <p><u>Analyzing and Interpreting Data:</u> Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</p>	<ul style="list-style-type: none"> ◇ <i>Project based learning</i> ◇ <i>Multimedia presentations</i> ◇ <i>Conclusion and analysis of exploratory activities Career exploration</i> <p><u>Science</u> Asking questions and defining problems: Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. (MS-ETS1-1)</p> <p><u>Developing and Using Models:</u> Modeling Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</p> <p><u>Analyzing and Interpreting Data:</u> Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</p>

	<p><u>Engaging in Argument from Evidence:</u> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)</p> <p><u>ELA/Literacy</u> Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (RST.6-8.7)</p> <p>Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (RST.6-8.9)</p>	<p><u>Engaging in Argument from Evidence:</u> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)</p> <p><u>ELA/Literacy</u> Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (RST.6-8.7)</p> <p>Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (RST.6-8.9)</p>
<p>Differentiation: (What type of differentiated instruction will be used for ELL, SP.ED. and G&T students?)</p>	<p><u>Additional considerations for English Language Learners (ELLs), Special Needs, Below Level (BSI)</u></p> <p><i>Individualized Education Plans (IEPs):</i></p> <ul style="list-style-type: none"> ⇒ Exemplars of varied performance levels ⇒ Multi-media presentations Consultation with ESL teachers ⇒ Manipulatives ⇒ Tiered/Scaffolded Lessons ⇒ Mnemonic devices ⇒ Visual aids ⇒ Modeling ⇒ Guided note-taking ⇒ Study Guides ⇒ Modified homework ⇒ Differentiated pre-typed class notes and example problems <p><i>Advanced/Gifted Students:</i></p>	<p><u>Additional considerations for English Language Learners (ELLs), Special Needs, Below Level (BSI)</u></p> <p><i>Individualized Education Plans (IEPs):</i></p> <ul style="list-style-type: none"> ⇒ Exemplars of varied performance levels ⇒ Multi-media presentations Consultation with ESL teachers ⇒ Manipulatives ⇒ Tiered/Scaffolded Lessons ⇒ Mnemonic devices ⇒ Visual aids ⇒ Modeling ⇒ Guided note-taking ⇒ Study Guides ⇒ Modified homework ⇒ Differentiated pre-typed class notes and example problems <p><i>Advanced/Gifted Students:</i></p>

	<ul style="list-style-type: none">⇒ Open-ended responses⇒ Curriculum Compacting⇒ Advanced problems to extend the critical thinking skills of advanced learner⇒ Supplemental reading material for independent study⇒ Flexible grouping⇒ Tiered assignments⇒ Topic selection by interest	<ul style="list-style-type: none">⇒ Open-ended responses⇒ Curriculum Compacting⇒ Advanced problems to extend the critical thinking skills of advanced learner⇒ Supplemental reading material for independent study⇒ Flexible grouping⇒ Tiered assignments⇒ Topic selection by interest
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Unit of Study: Cascading Style Sheets Dynamic Web Applications	Cascading Style Sheets (CSS) Weeks 8 to 21 (13 Weeks)	Dynamic Web Applications Weeks 22 to 27 (5 Weeks)
STAGE 1 DESIRED RESULT		
Established Goals: NJSLS: (include technology and 21 st century standards)	<p style="text-align: center;"><i>Technology</i></p> 8.1.12.A.2 8.1.12.A.4 8.1.12.F.2 8.2.12.A.1 8.2.12.F.1 <p style="text-align: center;"><i>21st Century Life and Careers</i></p> 9.1.12.A.1 9.1.12.F.2 <p style="text-align: center;"><i>Career Ready Practices</i></p> CRP1. - CRP12	<p style="text-align: center;"><i>Technology</i></p> 8.1.12.A.2 8.1.12.A.4 8.1.12.F.2 8.2.12.A.1 8.2.12.F.1 <p style="text-align: center;"><i>21st Century Life and Careers</i></p> 9.1.12.A.1 9.1.12.F.2 <p style="text-align: center;"><i>Career Ready Practices</i></p> CRP1. - CRP12
Enduring Understandings: (students will understand) foster inquiry, understanding, and transfer of learning?)	<ol style="list-style-type: none"> 1. CSS, or Cascading Style Sheets, is a language that web developers use to <i>style</i> the HTML content on a web page such as colors, font types, font sizes, shadows, images, and element positioning. 2. There are three ways to include CSS in your html document: You can add a style attribute to a tag. You can embed your CSS in your file inside a style tag. You can put all of your CSS in a separate style file and include the style file into your HTML. This is the preferred way of doing it because it achieves the greatest amount of separation between the content and how the content looks. 	<ol style="list-style-type: none"> 1. CGI stands for Common Gateway Interface, and in the beginning (circa 1992) this was how dynamic webpages were generated. 2. getElementById, createElement and appendChild functions allow JavaScript to dynamically create tags and add them into live document object models 3. The “Publish and Subscribe” design pattern is used if you want multiple things to happen when an event happens or to add new callback functions sometime after you the original element is created.
Essential (Guiding) Questions: (What provocative	<ol style="list-style-type: none"> 1. How do you select which HTML elements you wish to style and set up your CSS file structure? 	<ol style="list-style-type: none"> 1. What key JavaScript functions would you use to create a dynamic app with interactive pages from the ground up?

questions will foster inquiry, understanding, and transfer of learning?)	2. How might you use the basic structure and syntax of CSS to style web page elements?	2. How might you use getElementById, createElement and appendChild functions to create tags and add them into your live document object model?
STAGE 2 EVIDENCE		
Assessments & Evidence: (Through what authentic performance tasks will students demonstrate the desired understandings?) (By what criteria will performance of understanding be judged?)	Formative Assessments Online Lab/Practice Benchmarks Exit Tickets Open-ended responses Class discussions Writing assessed through use of rubrics Classwork/Homework Cooperative Group/Pair activities Summative Assessments Written assessments Projects and Multimedia presentations Simulation Project Unit assessment Semester cumulative exam/assessment	Formative Assessments Online Lab/Practice Benchmarks Exit Tickets Open-ended responses Class discussions Writing assessed through use of rubrics Classwork/Homework Cooperative Group/Pair activities Summative Assessments Written assessments Projects and Multimedia presentations Simulation Project Unit assessment Semester cumulative exam/assessment
STAGE 3 LEARNING PLAN		
Learning Activities: (What specific activities will students do and what skills will students know as a result of the unit?)	1. Demonstration and practice 2. Utilize CSS to create a drop-down menu. 3. Set up a CSS file 4. Create CSS selectors 5. Set up CSS rule sets.	1. Utilize the document object model to create an app prototype 2. Host a Website on GitHub
Resources:	1. Online Lab: Khan Academy, Computer Programming Class 2. Online Lab: Codecademy 3. E-book: Fundamentals of Web Programming 4. Google Docs 5. Google Classroom	1. Online Lab: Khan Academy, Computer Programming Class 2. Online Lab: Codecademy 3. E-book: Fundamentals of Web Programming 4. Google Docs 5. Google Classroom
Interdisciplinary Connections:	◇ <i>Project based learning</i> ◇ <i>Multimedia presentations</i>	◇ <i>Project based learning</i> ◇ <i>Multimedia presentations</i>

<p>(e.g. writing, literacy, math, science, history, 21st century life and careers, technology)</p>	<p>◇ <i>Conclusion and analysis of exploratory activities Career exploration</i></p> <p><u>Science</u> Asking questions and defining problems: Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. (MS-ETS1-1)</p> <p><u>Developing and Using Models:</u> Modeling Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</p> <p><u>Analyzing and Interpreting Data:</u> Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</p> <p><u>Engaging in Argument from Evidence:</u> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)</p> <p><u>ELA/Literacy</u> Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (RST.6-8.7)</p> <p>Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (RST.6-8.9)</p>	<p>◇ <i>Conclusion and analysis of exploratory activities Career exploration</i></p> <p><u>Science</u> Asking questions and defining problems: Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. (MS-ETS1-1)</p> <p><u>Developing and Using Models:</u> Modeling Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</p> <p><u>Analyzing and Interpreting Data:</u> Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</p> <p><u>Engaging in Argument from Evidence:</u> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)</p> <p><u>ELA/Literacy</u> Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). (RST.6-8.7)</p> <p>Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. (RST.6-8.9)</p>
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<p>Differentiation: (What type of differentiated instruction will be used for ELL, SP.ED. and G&T students?)</p>	<p><u>Additional considerations for English Language Learners (ELLs), Special Needs, Below Level (BSI)</u></p> <p>Individualized Education Plans (IEPs):</p> <ul style="list-style-type: none"> ⇒ Exemplars of varied performance levels ⇒ Multi-media presentations Consultation with ESL teachers ⇒ Manipulatives ⇒ Tiered/Scaffolded Lessons ⇒ Mnemonic devices ⇒ Visual aids ⇒ Modeling ⇒ Guided note-taking ⇒ Study Guides ⇒ Modified homework ⇒ Differentiated pre-typed class notes and example problems <p>Advanced/Gifted Students:</p> <ul style="list-style-type: none"> ⇒ Open-ended responses ⇒ Curriculum Compacting ⇒ Advanced problems to extend the critical thinking skills of advanced learner ⇒ Supplemental reading material for independent study ⇒ Flexible grouping ⇒ Tiered assignments ⇒ Topic selection by interest 	<p><u>Additional considerations for English Language Learners (ELLs), Special Needs, Below Level (BSI)</u></p> <p>Individualized Education Plans (IEPs):</p> <ul style="list-style-type: none"> ⇒ Exemplars of varied performance levels ⇒ Multi-media presentations Consultation with ESL teachers ⇒ Manipulatives ⇒ Tiered/Scaffolded Lessons ⇒ Mnemonic devices ⇒ Visual aids ⇒ Modeling ⇒ Guided note-taking ⇒ Study Guides ⇒ Modified homework ⇒ Differentiated pre-typed class notes and example problems <p>Advanced/Gifted Students:</p> <ul style="list-style-type: none"> ⇒ Open-ended responses ⇒ Curriculum Compacting ⇒ Advanced problems to extend the critical thinking skills of advanced learner ⇒ Supplemental reading material for independent study ⇒ Flexible grouping ⇒ Tiered assignments ⇒ Topic selection by interest
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Unit of Study: JavaScript	JavaScript Weeks 28 to 36 (8 Weeks)	
STAGE 1 DESIRED RESULT		
<p>Established Goals: NJSLS: (include technology and 21st century standards)</p>	<p><i>Technology</i> 8.1.12.A.2 8.1.12.A.4 8.1.12.F.2 8.2.12.A.1 8.2.12.F.1</p> <p><i>21st Century Life and Careers</i> 9.1.12.A.1 9.1.12.F.2</p> <p><i>Career Ready Practices</i> CRP1. - CRP12</p>	
<p>Enduring Understandings: (students will understand..) foster inquiry, understanding, and transfer of learning?)</p>	<ol style="list-style-type: none"> 1. JavaScript is an object oriented language used by most modern web browsers. 2. JavaScript is a powerful, flexible, and fast programming language used for increasingly complex web development. 3. A program is built out of statements, which themselves sometimes contain more statements. Statements tend to contain expressions, which themselves can be built out of smaller expressions. 4. Putting statements after one another gives you a program that is executed from top to bottom. 5. Variables can be used to file pieces of data under a name, and they are useful for tracking state in your program. The environment is the set of variables that are defined. 6. Functions are special values that encapsulate a piece of program. You can invoke them by writing functionName (argument1, argument2). 	

	Such a function call is an expression and may produce a value.	
Essential (Guiding) Questions: (What provocative questions will foster inquiry, understanding, and transfer of learning?)	<ol style="list-style-type: none"> 1. Why is JavaScript referred to as an “Object Oriented” language? 2. What are some ways would you use variables and functions in a simple JavaScript program? 	
STAGE 2 EVIDENCE		
Assessments & Evidence: (Through what authentic performance tasks will students demonstrate the desired understandings?) (By what criteria will performance of understanding be judged?)	<p><i>Formative Assessments</i></p> <p>Online Lab/Practice Benchmarks Exit Tickets Open-ended responses Class discussions Writing assessed through use of rubrics Classwork/Homework Cooperative Group/Pair activities</p> <p><i>Summative Assessments</i></p> <p>Written assessments Projects and Multimedia presentations Simulation Project Unit assessment Semester cumulative exam/assessment</p>	
STAGE 3 LEARNING PLAN		
Learning Activities: (What specific activities will students do and what skills will students know as a result of the unit?)	<ol style="list-style-type: none"> 1. Demonstration and practice 2. Create a simple web page that contains an h2 with the word “Hello” a text input box, and a button. 3. Create simple web page that contains a button and a paragraph with the id of count. 4. Create an html page with two text input boxes and four buttons. The buttons should be labeled +, -, *, and /. When one of these buttons is pressed you should get the value from both 	

	text input boxes and add, subtract, multiply, or divide the numbers entered in the text input boxes.	
Resources:	<ol style="list-style-type: none"> 1. Online Lab: Khan Academy, Computer Programming Class 2. Online Lab: Codecademy 3. E-book: Fundamentals of Web Programming 4. Google Docs 5. Google Classroom 	
Interdisciplinary Connections: (e.g. writing, literacy, math, science, history, 21st century life and careers, technology)	<ul style="list-style-type: none"> ◇ <i>Project based learning</i> ◇ <i>Multimedia presentations</i> ◇ <i>Conclusion and analysis of exploratory activities Career exploration</i> <p><u>Science</u> Asking questions and defining problems: Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. (MS-ETS1-1)</p> <p><u>Developing and Using Models:</u> Modeling Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)</p> <p><u>Analyzing and Interpreting Data:</u> Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)</p> <p><u>Engaging in Argument from Evidence:</u> Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)</p>	

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<p>Differentiation: (What type of differentiated instruction will be used for ELL, SP.ED. and G&T students?)</p>	<p><u>Additional considerations for English Language Learners (ELLs), Special Needs, Below Level (BSI)</u></p> <p><i>Individualized Education Plans (IEPs):</i></p> <ul style="list-style-type: none"> ⇒ Exemplars of varied performance levels ⇒ Multi-media presentations Consultation with ESL teachers ⇒ Manipulatives ⇒ Tiered/Scaffolded Lessons ⇒ Mnemonic devices ⇒ Visual aids ⇒ Modeling ⇒ Guided note-taking ⇒ Study Guides ⇒ Modified homework ⇒ Differentiated pre-typed class notes and example problems <p><i>Advanced/Gifted Students:</i></p> <ul style="list-style-type: none"> ⇒ Open-ended responses ⇒ Curriculum Compacting ⇒ Advanced problems to extend the critical thinking skills of advanced learner ⇒ Supplemental reading material for independent 	

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Reference:

Miller, B. (2014, Nov.). Fundamentals of Web Programming. Retrieved January 10, 2019,

from <https://runestone.academy/runestone/static/webfundamentals/index.html>

Codecademy (2019). Retrieved January 10, 2019, from <https://www.codecademy.com/learn>

Khan Academy (2019). Retrieved January 10, 2019, from <https://www.khanacademy.org/coach/class/5741031244955648/content>