Unit 1: What is the Web?

Content Area: **Computer Science**
Course(s):
Time Period: **Marking Period 1**
Length: **8 Days**
Status: **Published**

Summary

Students will be introduced to the world wide web and the Internet in this unit. The basics of how a website is stored and sent to devices will be discussed, along with a brief overview of the relevant protocols. Browsers, Internet censorship and Internet safety will also be examined.

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CS.9-12.AP	Algorithms & Programming
LA.K-12.NJSLSA.L4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
LA.K-12.NJSLSA.L5	Demonstrate understanding of word relationships and nuances in word meanings.
WRK.K-12.P.4	Demonstrate creativity and innovation.
WRK.K-12.P.8	Use technology to enhance productivity increase collaboration and communicate effectively.
TECH.8.1.12.A.CS1	Understand and use technology systems.
TECH.8.1.12.D.1	Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.
TECH.8.1.12.D.2	Evaluate consequences of unauthorized electronic access (e.g., hacking) and disclosure, and on dissemination of personal information.
TECH.8.1.12.D.3	Compare and contrast policies on filtering and censorship both locally and globally.
TECH.8.1.12.D.4	Research and understand the positive and negative impact of one's digital footprint.
TECH.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.
TECH.8.1.12.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.
TECH.8.1.12.D.CS2	Demonstrate personal responsibility for lifelong learning.
TECH.8.1.12.D.CS3	Exhibit leadership for digital citizenship.
TECH.8.2.12.A.CS1	The characteristics and scope of technology.
TECH.8.2.12.B.1	Research and analyze the impact of the design constraints (specifications and limits) for a product or technology driven by a cultural, social, economic or political need and publish for review.
TECH.8.2.12.B.CS1	The cultural, social, economic and political effects of technology.
TECH.8.2.12.C.2	Analyze a product and how it has changed or might change over time to meet human needs and wants.
	Network security depends on a combination of hardware, software, and practices that protect data while it is at rest, in transit, and in use. The needs of users and the sensitivity of data determine the level of security implemented. Advanced attacks take advantage of

common security vulnerabilities.

Engineering design evaluation, a process for determining how well a solution meets requirements, involves systematic comparisons between requirements, specifications, and constraints.

Essential Questions/Enduring Understandings

Essential Questions:

- What is the difference between the Internet and the World Wide Web?
- What purpose do protocols serve?
- What are some ways to minimize risk while using the Internet?

Enduring Understandings:

- The Internet is the physical structure that connects devices together, and the World Wide Web is an application that runs on the Internet. The World Wide Web is an abstraction that refers to the various documents, images, and other data types accessible to those who are connected to the Internet.
- Protocols allow different devices to talk to each other by guaranteeing that information is sent, received, and stored in a uniform manner.
- While the Internet is a valuable tool that allows access to and dissemination of information, it can also serve as an avenue for someone to attack devices. There are simple methods that Internet users can use to help to protect their devices.

Objectives

Students Will Know:

- the difference between the Internet and the World Wide Web.
- what "HTTP," "HTTPS," and "HTML" stand for.

Students Will be Skilled at:

- taking basic safety precautions while browsing the web.

Learning Plan

- Lectures on topics listed in summary.
- Current events articles on Internet censorship and Internet safety.
- Students research articles related to the Internet, Internet safety, and/or Internet censorship.

Assessment

- Assessments

    - Formative: Daily assessments using examples from class notes and CodeHS.com, AP Classroom/Albert Checks for Understanding

    - Summative: Teacher-created assessments/projects and CodeHS Computer Science Projects, AP Classroom/Albert Unit Assessments

    - Benchmark: Check for understanding benchmark assessments on CodeHS, AP Classroom/Albert/Khan Academy Diagnostics

    - Alternative Assessments: Student-centered activities such as a doorbell coding project, game design projects, and other activities involving real world applications

- Students provide written explanations for questions about the Internet, Internet protocols, and/or browsers. This may or may not take the form of a formal quiz.
- Students present their research.

Materials

- Core instructional materials: [Core Book List](#)

    Supplemental materials: CodeHS

- Internet
- Computers
- Projection sytem for lecture
- [codehs](#) (for remidiation and differentiation as deemed appropriate)