Unit 2: Tracing your Digital Footprint and Cybersecurity

Content Area: **Technology**
Course(s):
Time Period: **Marking Period 1**
Length: **8 blocks**
Status: **Published**

Course Description & Instructional Notes

This unit includes topics on Internet etiquette and how to stay safe on the world wide web. We will also look at the potential effects of our digital footprints, how to protect information from online risks, and the implications of cyberbullying. Finally, the module includes how to find and cite quality resources online.

This unit also gives an introduction to cybersecurity. It focuses on why cybersecurity is important, recent threats to cybersecurity, and different careers in the field.

Prior Knowledge
none

Instructional Notes
The course utilizes a blended classroom approach. The content is a mix of web-based and physical activities. Students will write and run code in the browser, create websites and digital presentations, and engage in in-person collaborative exercises with classmates. Teachers utilize tools and resources provided by CodeHS to leverage time in the classroom and give focused 1-on-1 attention to students.

Technology Integration
Computer Science naturally integrates technology on a daily basis.

Enduring Understandings

The use of computing innovations may involve risks to personal safety and identity.

It is crucial that companies and individuals take precautions to protect themselves from the growing threat of cyber attacks.

Essential Questions

What data are generated by smartphones, and what are they being used for?

Why is cybersecurity important?

Student Learning Objectives

Students will be able to:

- Set individual learning goals for themselves in the cybersecurity course
- Explain why it is important to learn computer science, regardless of their goals in college and career
- Define cybersecurity
- Describe how the Internet of Things makes people more vulnerable to cyber attacks
- Reflect on recent cyber attacks and identify the financial and societal impact of the attack
- Evaluate recent cyber attacks and understand the negative consequences of these attacks
- Understand career opportunities in the field of cybersecurity
- Identify what the CIA triad is and how it relates to cybersecurity
- Identify which part of the CIA triad has been broken in a given scenario
- Prove their knowledge of basic cybersecurity concepts and its impacts through a multiple choice quiz
- Understand how their online activity contributes to a permanent and public digital footprint
- Articulate their own social media guidelines to protect their digital footprint
- Understand the impact of cyberbullying, and identify unacceptable bullying behavior
- Identify proper actions to take if they are victims of cyberbullying or if they observe someone being cyberbullied
- Identify predatory behavior and how to respond to it online
- Use best practices in personal privacy and security, including strong passwords, using https, and reading privacy policies
- Effectively search for and evaluate resources
- Explain what copyright laws are and why they are important
- Find images they are legally allowed to use in their projects
- Accurately attribute images they find and want to use

Vocabulary & Learning Experiences

Vocabulary

Cybersecurity, Computer Science, Cybercrime, Ransomware, Internet of Things, Phishing, CIA Triad, Confidentiality, Integrity, Availability, Digital Footprint, Cyberbullying, Data privacy, Data security, https, Privacy Policy, Information Literacy, Copyright, Public domain

Planned Learning Experiences
Project: Public Service Announcement
Now that students have learned about digital citizenship and cyber hygiene, they will take what they have learned and create a PSA to inform members in the community about a topic.

Resources

CodeHS

Code.org

Blown to Bits

Assessments

Formative
Think like a Computer Scientist Journal:
Students complete at least five journal entries based on teacher provided prompts that could include major topics, key points, vocabulary, syntax, and/or flowcharts/programming planning.
Quizzes embedded in CodeHS Modules and Code Review

Summative
Unit Quizzes (multiple choice only)
Student Choice Unit Project

NJSLS Standards

NJSLS Standards Copied and Pasted as well as linked.

NJSLS Computer Science and Design Thinking

8.2.12.ITH.1: Analyze a product to determine the impact that economic, political, social, and/or cultural factors have had on its design, including its design constraints.
8.2.12.ITH.2: Propose an innovation to meet future demands supported by an analysis of the potential costs, benefits, trade-offs, and risks related to the use of the innovation.

8.2.12.ITH.3: Analyze the impact that globalization, social media, and access to open source technologies has had on innovation and on a society's economy, politics, and culture.
8.2.12.EC.1: Analyze controversial technological issues and determine the degree to which individuals, businesses, and governments have an ethical role in decisions that are made.
8.2.12.EC.2: Assess the positive and negative impacts of emerging technologies on developing countries and evaluate how individuals, non-profit organizations, and governments have responded.
8.2.12.EC.3: Synthesize data, analyze trends, and draw conclusions regarding the effect of a technology on the individual, culture, society, and environment and share this information with the appropriate audience.

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Additional NJSLS Standards

NJSLS Standards Copied and Pasted as well as linked.

Interdisciplinary Connections

NJSLS Career Readiness, Life Literacies, and Key Skills

NJSLS Companion Standards Grades 9-12 (Reading & Writing in Science & Technical Subjects)

9.4.12.CI.1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas
9.4.12.DC.3: Evaluate the social and economic implications of privacy in the context of safety, law, or ethics
9.4.12.DC.4: Explain the privacy concerns related to the collection of data (e.g., cookies) and generation of data through automated processes that may not be evident to users
9.4.12.TL.1: Assess digital tools based on features such as accessibility options, capacities, and utility for accomplishing a specified task

Modifications/Accommodations

GENERAL CONSIDERATIONS FOR DIVERSE LEARNERS

English Language Learners	Students Receiving Special Education Services	Advanced Learners
- Personal glossary	- Small group/One to one	- Use of high level academic vocabulary/texts
- Text-to-speech	- Additional time	- Problem-based learning
- Extended time	- Review of directions	- Pre assess to condense
- Simplified / verbal	- Student restates information	

instructions	- Space for movement or breaks	curriculum
- Frequent breaks	- Extra visual and verbal cues and prompts	- Interest-based research
	- Preferential seating	- Authentic problem-solving
WIDA Can Do Descriptors for Grade 9-12	- Follow a routine/schedule	- Homogeneous grouping opportunities
	- Rest breaks	
WIDA Essential Actions Handbook	- Verbal and visual cues regarding directions and staying on task	Knowledge and Skill Standards in Gifted Education for All Teachers
FABRIC Paradigm	- Checklists	
Wall Township ESL Grading Protocol	- Immediate feedback	Pre-K-Grade 12 Gifted Programming Standards
		Gifted Programming Glossary of Terms
*Use WIDA Can Do Descriptors in coordination with Student Language Portraits (SLPs).	Students receiving Special Education programming have specific goals and objectives, as well as accommodations and modifications outlined within their Individualized Education Plans (IEP) due to an identified disability and/or diagnosis. In addition to exposure to the general education curriculum, instruction is differentiated based upon the student's needs. The IEP acts as a supplemental curriculum guide inclusive of instructional strategies that support each learner.	Students with 504 Plan
	Considerations for Special Education Students 6-12	Teachers are responsible for implementing designated services and strategies identified on a student's 504 Plan.
	National Center on Universal Design for Learning - About UDL	
	UDL Checklist	
	UDL Key Terms	

At Risk Learners / Differentiation Strategies

Alternative Assessments	Independent Research & Projects	Jigsaw
Choice Boards	Multiple Intelligence Options	Think-Tac-Toe
Games and Tournaments	Project-Based Learning	Cubing Activities
Group Investigations	Varied Supplemental Activities	Exploration by Interest

Learning Contracts

Leveled Rubrics

Literature Circles

Multiple Texts

Personal Agendas

Homogeneous Grouping

Varied Journal Prompts

Tiered Activities/Assignments

Tiered Products

Graphic Organizers

Choice of Activities

Mini-Workshops to Reteach or Extend

Think-Pair-Share by readiness or interest

Use of Collaboration of Various Activities

Flexible Grouping

Goal-Setting with Students

Homework Options

Open-Ended Activities

Varied Product Choices

Stations/Centers

Work Alone/Together