

Unit 1: Foundations and Threats

Content Area: **Business**
Course(s): **Generic Course**
Time Period: **Semester 1**
Length: **4 weeks**
Status: **Published**

Enduring Understandings

Cybersecurity shapes and is shaped by significant historical ideas and events.

Cybersecurity is global, transcending traditional boundaries, and is always evolving.

Standards

CAEP.9.2.12.C.3	Identify transferable career skills and design alternate career plans.
CAEP.9.2.12.C.7	Examine the professional, legal, and ethical responsibilities for both employers and employees in the global workplace.
TECH.8.1.12	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.12.A	Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.12.B	Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.1.12.C	Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
TECH.8.1.12.D	Digital Citizenship: Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
TECH.8.1.12.E	Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.
TECH.8.1.12.F	Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.
TECH.8.2.12	Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.
TECH.8.2.12.A	The Nature of Technology: Creativity and Innovation: Technology systems impact every aspect of the world in which we live.
TECH.8.2.12.B	Technology and Society: Knowledge and understanding of human, cultural and society values are fundamental when designing technology systems and products in the global society.
TECH.8.2.12.C	Design: The design process is a systematic approach to solving problems.
TECH.8.2.12.D	Abilities for a Technological World: The designed world is the product of a design process that provides the means to convert resources into products and systems.

Essential Questions

- Why should passwords be complex?
- What are the types of biometrics?
- What is multi factor authentication?
- Where are passwords stored?
- What are different types of access control?
- What is least privilege?
- What are some dangers of social engineering?

Knowledge and Skills

After completing this unit, student can:

Section 1.1: CIA Triad + Authentication

- Identify the key goals and frameworks of Cybersecurity
- Identify the CIA Triad as the characteristics of information
- Identify the state of information as stored, transmission and processing
- Identify primary methods of authentication
- Apply best practices for creating a safe password
- Define password attacks using database information
- Recognize authentication vocabulary terms
- Understand methods of secure password storage
- Define hash as a method of one-way conversion
- Define alternatives to passwords for authentication
- Demonstrate an understanding of various methods of authentication
- Make a convincing argument as to what methods of authentication would best accomplish their assigned goal

Section 1.2: Identifying Security Threats

- Identify the types of malicious software that exist and how they can be layered to increase the security threat
- Examine how malware has a negative impact on a computer system and also on a person.
- Summarize the best practices for protecting against malicious software

Section 1.3: Introduction to Command Line Interface

- Identify the characteristics of virtualization software
- Apply steps to open and configure Virtual Machines

- Confirm access to online VMs
- Identify the four types of Operating systems and their primary uses
- Recognize the reasons for using a system in Command Line Interface
- Identify the basic CLI commands for file access and manipulation for Linux
- Apply the basic CLI commands for file access and manipulation in Linux

Transfer Goals

Students will apply knowledge of cybersecurity concepts to engage in discussions of current events.

Students will practice digital citizenship which is an important part of 21st century culture.

Students will understand that complex mathematical models are used to keep data secure.

Students will be able to use ethical reflection and judgment regarding benefits and harms to make decisions.

Students will be able to think critically to evaluate the trust and credibility of organizations.

Students will know the importance of keeping their data secure and private.

Students will install computer updates as soon as they become available.

Students will develop a security mindset which is the ability to identify what might go wrong.

Students will be able to keep themselves and their data safe.

Resources

Curriculum is based on the [Garden State Cybersecurity Curriculum](#)