Multifactor Logins

**Lesson Description:** In this learning module, the teachers will learn about multifactor logins to add an extra level of security to portable devices

**Prerequisite Knowledge:** None

**Length of Completion**: 50 minutes

**Level of Instruction:** High School or Middle school introductory level.

**Applicable First Principles &/or Concepts:**

**GenCyber First Principles**

Domain Separation Abstraction

Process Isolation Data Hiding

Resource Encapsulation Layering

Modularity Simplicity

Least Privilege Minimization

**GenCyber Cybersecurity Concepts**

**Defense in Depth** **Availability**

Confidentiality Think Like an Adversary

Integrity Keep it Simple

**Resources that are Needed:** A PC computer with internet connectivity.

**Accommodations Needed:** Instructions will be given verbally and on screen. Images will be used in PowerPoint to support student understanding. Students will have the opportunity to engage in small group discussion before whole-group share out. Other accommodations as needed

# learning outcomes

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* Explain the difference between single factor and two factor login
* Explain the types of hardware/devices that can be used in multi-factor login
* Explain the potential security issues with a phone based multi-factor login
* Explain the security concerns with biometric logins

# Lesson Details

**Interconnection:** None

**Assessment:** Post exercise discussion

**Extension Activities:** None

**Differentiated Learning Opportunities:** None

# lesson 5.4

**Lesson 5.4 Details:**

**Warm Up:** Watch video and work through part of this module from Goodwill Community Foundation <https://edu.gcfglobal.org/en/internetsafety/creating-strong-passwords/1/>

**Lesson:**

Teachers will research the typical web services they use and if those services allow multi-factor login. If the teacher wants, they can activate multi-factor logins on one or more services.

- Describe the Teacher Instruction:

10 minutes for warm up, 15 minutes for slides / lecture, 20 minutes for activity, and 5 minutes for questions and troubleshooting. The following topics will be discussed:

A. The Origins of Passwords

1. Originally just used for access

2. Now used for protection of our most sacred data

B. The Basics of Multi-factor Authentication

1. The concept behind multi-factor

2. Layers of login

C. Two-factor Authentication

1. Something you know, something you own

D. Three-factor Authentication

1. Something you know, something you own, something you are

E. Biometrics

1. If breached, can’t be reset like a password

2. Changes to the physiology over time

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