Types of Cyber Attacks

**Lesson Description:** In this learning module, the teachers will learn the different types of cyber attacks on a computer, such as phishing, spear phishing, adware, spyware, ransomware, trojan horse virus, worms, and main-in-the-middle. A broader focus will be on what types of software would be used to block or prevent these annoyances from occurring.

**Prerequisite Knowledge:** How to surf the web and use Google.

**Length of Completion**: 45 minutes

**Level of Instruction:** All.

**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:** Computer with internet access.

**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 different attacks
* Provide examples of several famous attacks

# Lesson Details

**Interconnection:** Lays out foundations of online safety for remainder of the day and for lessons on Friday.

**Assessment:** Post exercise discussions, Observations, Walk around.

**Extension Activities:** Students can do a google search on “cyber attacks” to find many links to websites and TED Talks on the subject.

**Differentiated Learning Opportunities:** None

# lesson 3.4

**Lesson 3.4 Details:**

**Warm Up:** Instructor asks the teachers about recent attacks in the news. Instructor asks if anyone has ever been affected by an attack.

**Lesson:**

Instructor will provide examples of famous attacks and teachers will decide which type of attack occurred. This might occur in a lecture format or in a worksheet format.

- Describe the Teacher Instruction:

10 minutes for warm up, 20 minutes for slides and video, 10 minutes for exercise, 5 minutes for questions. The following topics will be discussed:

1. Types of Attacks: phishing, spear phishing, adware, spyware, ransomware, trojan horse, virus, worm, man-in-the-middle

2. Famous examples of certain attacks (Stuxnet)

https://www.mcafee.com/enterprise/en-us/threat-center.html

https://www.symantec.com/security-center/threats

https://www.ted.com/talks/mikko\_hypponen\_fighting\_viruses\_defending\_the\_net

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