Website Security

**Lesson Description:** In this learning module, the teachers will learn about how a webpage is built with HTML, and how a Content Management System is used to supply information to the page. The teachers will also learn about destructive software that can come from an advertisement, as well as drive-by-downloads

**Prerequisite Knowledge:** How to surf the World Wide Web with a computer.

**Length of Completion**: 90 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, and a web browser.

**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 basics of HTML
* Explain the concept of a Content Management System
* Explain the concept of Malvertisement
* Explain how a drive-by-download works
* Explain the concept of browser plugins
* Demonstrate minimal secure browser settings

# Lesson Details

**Interconnection:** None

**Assessment:** Post exercise discussion

**Extension Activities:** Teachers can continue with building simple web pages and web sites.

**Differentiated Learning Opportunities:** None

# lesson 5.3

**Lesson 5.3 Details:**

**Warm Up:** Instructor asks the teachers about their experiences developing websites with HTML. The discussion moves into reviewing the code behind web pages.

**Lesson:**

There are 3 activities for this unit. Teachers will produce a simple webpage using simple HTML. Teachers will also use a CMS to produce a simple website. Teachers will finish the course by installing the appropriate browser plugins for a more secure browsing experience.

- Describe the Teacher Instruction:

10 minutes for warm up, 30 minutes for lecture / slides, 40 minutes for activities, 10 minutes for questions and troubleshooting. The following topics will be discussed:

A. Basics of HTML

1. Markup Language

2. Tag Based

3. Basic Page Structure

B. Basics of Content Management Systems (CMS)

1. WYSIWYG concept

2. Model / View / Controller concept

3. Good, Bad, and the Ugly of CMS

C. Malvertisements and Drive-By-Downloads

1. Why Ads Can Be Bad on the Internet

D. Browser Plugins to Improve Security

1. Concept of Browser Plugins

2. NoScript, Privacy Badger, and Ghostly

E. Browser Settings for Security

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