

Foundational Principles of Cybersecurity

TOPIC: FOUNDATIONAL PRINCIPLES OF CYBERSECURITY

GRADES 9-12

LESSON DURATION: 45 MINUTES

SOFT SKILLS: RESEARCH, COMMUNICATION, CRITICAL THINKING

Introduction:

- This activity introduces students to the basic foundational principles of cybersecurity. Students will research for definitions and then supply real world examples of each while reflecting on personal cyber habits.

Learning Outcomes:

- Students will learn the basic principles of cybersecurity while reflecting upon their own security habits.

Materials:

- Online access
- [Student worksheet for discussion purposes](#)
- [Teacher version of worksheet](#)

Activities:

1. This activity can be modified if the teacher wants to make it more discussion based. The information supplied could easily be turned into a presentation for discussion purposes. This lesson is designed for insertion into a basic technology or CS course.
2. Students should be given the student worksheet(linked above). The students should use online resources to find definitions of the cybersecurity principles. The teacher should then review the definitions with students.
3. Students should then be asked to complete part two and list examples of how they fulfill each principle on their personal device(s). If students do not follow security protocol, they should give examples of ways they could fulfill each principle.
4. A teacher worksheet is included above to help facilitate discussion.

Enrichment/Follow-up:

1. Assign student to the following small group activity. Each group must come up with a small business that they would like to own and operate. Once they have developed their business, have them explain how they would secure their data using the 5 principles discussed in class. They should include concrete actions; not vague terms. If they talk about utilizing a security company; have them research and list a company they would use. If they discuss limiting

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access to information; have them list who exactly would have access to what information...In others words, students should develop a basic physical and human security protocol for their established small business. Through this mini-simulation, the students will understand the challenges and necessity of adhering to cybersecurity policy. One data breach, malware incident, etc can wipe out the existence of a small business.

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