FLORIDA **CYBER**Hub

CYBER FLORIDA
at the UNIVERSITY OF SOUTH FLORIDA

Unit One: Introduction to Cybersecurity Careers and Hacking

Lesson One: Cybersecurity Career Field

Overview

In this lesson, students will define cybersecurity and discuss some of the misconceptions surrounding the cybersecurity field. Students are introduced to the various skills, jobs and potential career pathways in the cybersecurity field.

Topic or Unit of Study: Cybersecurity Careers   **Time Allotment**: 50-55 minutes

Objectives

By the end of this unit, students will be able to:

- Discuss misconceptions regarding cybersecurity.
- Explore a variety of careers to which computing is central.

Materials

- Poster paper
- Markers
- Internet access

Supplemental Materials and Resources

Recommended online resources:
- Video Clip: NCIS 2 Idiots 1 Keyboard
- LHB: Cybersecurity Degrees and Careers
- CyberSeek: Cybersecurity Career Pathways

Implementation

Warm-Up

Group students in groups of 3-4. To introduce the lesson, hold a brief discussion to ask what students "know" about cybersecurity. Allow students to reply and share. Display a definition of cybersecurity such as the one below:

The activity or process, ability or capability, or state whereby information and communications systems and the information contained therein are protected from and/or defended against damage, unauthorized use or modification, or exploitation.

Ask students to discuss in their groups the definition of cybersecurity and whether this changes their understanding of cybersecurity. Based on the definition, ask students to consider what a CAREER in cybersecurity might look like. Ask groups to quickly share what they discussed.

Show the video clip NCIS 2 Idiots 1 Keyboard. Quickly discuss the misconception regarding . Ask groups to discuss and share some of the other potential misconceptions regarding cybersecurity (ex. everyone is a hacker, hackers are bad, etc.).

Introduce the activity by explaining there is no such thing as single "cybersecurity", but rather many roles, responsibilities, positions, forms of work. Explain that they will be conducting research to discover why cybersecurity careers are important and to identify various skills needed to succeed in the cybersecurity field.

Direct Instruction

With students in groups, assign each group a career area that serve as a stepping stone to a career in cybersecurity. These could include: networking, software development, system engineering, financial and risk analysis, security intelligence, or another specific career. Explain that each of these career pathways have specific skills that can advance a career in cybersecurity. Explain that each group will be responsible for researching and identifying the various skills and careers within their assigned career focus area. Direct students to the cyberseeek pathways information page at https://www.cyberseeek.org/pathway.html to aid in research. Differentiation: For advanced groups, allow them to search without providing a specific site.

Jigsaw Activity

Distribute a piece of poster paper to each group and allow 10-15 minutes for groups to research and record their group's assigned career pathway. Groups should be able to identify the following information:
· Career pathway
· Jobs in that career pathway
· Skills needed to excel in these types of careers

Encourage creativity and allow students to share their information using visuals as well as text. Once groups have completed their poster, ask one student from each group to share findings. Each group should identify careers as well as required skills needed to excel in that career field.

Closing

Once each group completes, ask students to share what they have learned or something unexpected from their chart paper. Students should understand that cybersecurity is for people like them (for everyone, and made better with everyone) and that this is not something that only programmers go in to. Discuss skills and what they look like in the cybersecurity field.

Check for Understanding

After completing the jigsaw, ask students to write a brief individual summary answering the following questions:

1. Why is cybersecurity important?
2. Why is Cybersecurity needed?
3. What are some of the career paths available in the field of Cybersecurity?
4. What are at least three skills needed to excel in the field of Cybersecurity?

References

- Fiegueiredo, R. (2010, August 19). NCIS 2 Idiots 1 Keyboard [Video file]. Retrieved from https://www.youtube.com/watch?v=u8qgehH3kEQ

- Learn How To Become: Cyber Security Degrees and Careers (2018). Retrieved from https://www.learnhowtobecome.org/computer-careers/cyber-security/

- Cyberseek (n.d.). Cybersecurity Career Pathways. Retrieved from https://www.cyberseek.org/pathway.html