



CYBER CAREERS - POSITIVE REALITY

Lesson Description: This lesson is designed to educate students about careers, opportunities, requirements, expectations, salaries and benefits in the field of cyber security. In addition, the lesson is designed to uncover the importance of the demand, and the required skill set and certifications candidates need in order to create a career in cyber security.

Prerequisite Knowledge: Students should have a good understanding of what a career is, typical salary ranges and benefits. Students should have a basic idea of computer science, what minimal user security is all about and some idea of the meaning of cyber security. If students have taken a previous computer science course and/or CFM would be helpful.

Length of Completion: This lesson is designed to be delivered in a 30 minute class period.

Level of Instruction: This lesson is designed for high school level students, grades 9 -12. Older students are going to get more out of the lesson because of exposure to the world of work, careers, etc. and taking CFM.

Applicable Concepts:

GenCyber Cybersecurity Concepts

Defense in Depth - This is the concept most deeply related to this short lesson. The careers reviewed and the certifications related to them are a distinct justification for making sure PI is defended in depth for us all.

Integrity - Without integrity as a personal trait, cybersecurity is not possible. The only way that bad actors are going to be thwarted from taking over the world with crime and misinformation is if good people have integrity and the willingness to work hard every day to help keep private stuff private and learning open for all human beings for all time. The integrity of the information presented by Cyber.org on the career cards is strong.

Confidentiality

Think Like an Adversary

Availability

Keep it Simple

Learning Standards :

9-12.DL.2

Communicate and work collaboratively with others using digital tools to support individual learning and contribute to the learning of others.

Clarifying Statement:

Digital tools and methods should include both social and professional (those predominantly used in college and careers). Collaboration should occur in real time and asynchronously, and there should be opportunities for students to both seek and provide feedback on their thoughts and products.

9-12.DL.5

Transfer knowledge of technology in order to use new and emerging technologies on multiple platforms.

Clarifying Statement

New technologies could include different tools for collaboration, creation, etc. that the student has not used before. Platforms could include devices running different operating systems or could be emerging STEAM technologies. Digitally fluent individuals can move between platforms and can use that knowledge when encountering new technology.

9-12.IC.7

Investigate the use of computer science in multiple fields.

Resources that are Needed: This lesson requires a computer attached to a large monitor, the files attached, a roll of toilet paper, time, patience and positivity.



Accommodations Needed: Blind students will need to have fellow students read the term from the slide when playing on the giving team. Blind students will also need to visit the CompTIA website and Cyber.org with their browser to be able to have the content explained to them. Deaf students could be accommodated by the “giving team” writing some descriptors on paper or the board in the room.

LEARNING OUTCOMES

LESSON LEARNING OUTCOMES

- Students should be able to explain at least 2 or 3 cyber security career titles.
- Students should be able to compare and contrast 2 or 3 cyber security career titles.
- Students should be able to communicate with others on their team and brainstorm descriptive words to define/apply cybersecurity terms.
- Students should be able to watch and listen to presented words and phrases to identify cybersecurity terms.

LESSON DETAILS

Interconnection: This would be the first lesson in a collection of a cyber security careers unit. This unit is not yet established.

Assessment: The assessment part of this lesson currently is just the ability for students to guess the terms being described to them. A second informal assessment, would be the investigation of the career posters and comparing them to the compTIA website.

Extension Activities: Vocabulary quizzes are used before this “Password” game and after. The teams will eventually create a doc with 2 careers described and the expectations from the CompTIA website. This lesson is not “one and done”. It is the kind of thing the teacher comes back to every week for vocabulary reasons and every other week for career exposure.

Differentiated Learning Opportunities: This lesson for the most part is a team activity.game. The connected vocabulary quizzes would have different levels of content already filled in for some students. Time on

those quizzes would be adjusted per IEP. The Document created for the career descriptions would also have scaffolding and sections filled in, in addition to the teacher working directly with the student when creating it.

LESSON

Lesson 1 Details:

Warm Up: This lesson opens with the entire class going out into a long hallway. I would choose a student that needed a little boost to be the one to unroll the toilet paper down the hall. The roll may need to come back the other way, I would pick one or two other students to help with that. The rest of the class is lined up along the walls of the hall. After the roll is totally unrolled, ask students "how many sheets on this roll" - 1K - now picture that multiplied by 700. That is the number of Cyber Security jobs/careers needed today and into 2028. How many feet long is this roll? (use the tiles on the floor or terrazzo seams) Calculate the length in feet. The TP gets collected and recycled and the class goes back to the room. Once in the room, take the number of feet (150) multiplied by 700 - $150 \times 700 = 105,000$ feet /1580ft/mile = 95 miles. Ask students to picture a line of people from school almost to Syracuse - all applying for a job in cyber security. The vocabulary section of this lesson (Password Game) would be introduced by review of the words from the last session of Password and any questions addressed. Then teams are reviewed and we pick up the game where we left off last.

Lesson: The warm up is basically the lesson here. The posters and discussion of careers is surely going into a second class period and should really be multiple days. Especially when looking at compTIA and discussing certification. The positive reality is that this field is only an option for those that are continuous learners and thrive on self improvement.

Links:

A link to the Game Password CS - Please make a copy

<https://docs.google.com/presentation/d/1bGOzFIzaWjdbgsJAiuAabWHFecCZ8IDo48Bfu7RhFI/copy>

A link to the compTIA website

<https://www.comptia.org/>



A Link to the Cyber.org website career profile section

<https://cyber.org/career-exploration/cyber-career-profiles>

A link to the Google Slideshow of the Cyber.org Career Cards - Please make a copy

https://docs.google.com/presentation/d/11RnVvFa2EBdI4ejJrTWRqjw7hSZtqvqylkl_WWM7mqE/copy

A folder with the Cyber.org Career Cards in PDF Format

<https://drive.google.com/drive/folders/1d5YimIpadSeAOAlvTRTLywDNgToHEBgI?usp=sharing>

