



Mrs. Gentile's and Mr. Stewart's Lesson Plan

I.U.P. GenCyber Combination Camp Merged Session

Friday, June 22, 2018 9:00 - Noon

Lesson Title: Cyber Knowledge Fair

Summary: Students will prepare an 8-minute presentation with teacher assistance to explain technology skills gained during the week in all of the camp's various topics and will explain how to incorporate cyber security principles into their respective topics to other camp participants.

Grade Band:

PK – 12 Teachers, 6-12th graders

Time Required:

Three hours with breaks

Lesson Learning Objectives/Outcomes:

Upon completion of this lesson, students and teachers will be able to:

- Describe technological concepts and devices explored during the week
- Align Cyber Security First Principles to technology topics from the week.

Materials List:

Computers

One set of materials/devices for each group

How will you facilitate the Learning?

<p>9:00 - 9:05 Divide middle and high school students.. Ask all students to select a topic from the week's 8 topics out of a MS hat or HS hat.</p> <p>Students with the same topics will gather together to brainstorm how best to teach that topic to others. (about 2 students/topic) They will be informed that they will present their topics 8 times as we all rotate through the fair.</p>	<p>9:00 - 9:30 Teachers will work together to identify which Cyber-Security Principles match most closely to topics they have learned about during the week (robot programming, raspberry pi, cryptography, block chain technology, cyberbullying, Tynker, networking/nodes, password cracking, digital forensics, computer graphics)</p> <p>Teachers will decide among themselves which student topic they will help to advise</p>
<p>9:05 - 9:45 Students will be given a set of expectations to guide development of their 8-minute presentation for the fair. They must:</p>	<p>9:30 - 9:45 Each teacher will help to advise a group to be sure that they are following the expectations given to them.</p>

<ol style="list-style-type: none"> 1. Intro general uses of the topic 2. Demonstrate the most interesting aspect of the topic! 3. **Discuss which cyber-security principle(s) is/are addressed in the topic** 4. Ask questions from audience 	<p>Teachers can help to brainstorm how best to present the topics, if students need such support.</p> <p>**Teachers should verify correct usage of the cyber-security principles.**</p>
<p>9:50 - 10:55 HS groups present topics, while MS groups, teachers, profs rotate among stations (8 min/ station)</p>	
<p>10:55 - 12:00 MS groups present topics, while HS groups, teachers, profs rotate among stations (8 min/ station)</p>	

Mapping to ALL Cyber Security First Principles (ideally):

- | | |
|-------------------------------|---------------------|
| Domain Separation | Abstraction |
| Process Isolation | Data Hiding |
| Resource Encapsulation | Layering |
| Modularity | Simplicity |
| Least Privilege | Minimization |

Assessment of Learning:

TYPE:

- Observations
- Oral Questioning

Name/Description:

- As students share, demonstrate and collaborate
- As teachers/students ask for clarification on principles
- As observers ask questions of each presentation

Accommodations:

Assistance may be needed for groups without a strong leader, which teachers can provide.

Description of Extension Activities:

Teachers and students in this Gen-Cyber Combination Camp are expected to share knowledge and skills gained this week in their school environments, and hopefully to maintain an interest in Cyber Security- related careers.

Acknowledgements:

Gen-Cyber.com