



Mrs. Gentile's Lesson Plan
I.U.P. GenCyber Combination Camp
Monday, June 18, 2018 11:00 - 2:00

Lesson Title: Engaging, Non-Tech Ways to Teach Cyber Security First Principles

Summary: Teachers will be first discuss best practices in vocabulary development and the creation of differentiated activities as our combined experiences provide. Then, time will be dedicated to discussion and development of engaging strategies for embedding Cyber Security First Principles into all classrooms.

Grade Band:

PK – 12 Teachers

Time Required:

Two 50-minute sessions

Lesson Learning Objectives/Outcomes:

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

- Develop at least one GenCyber card game beyond the given suggestions
- Create an active game to practice the Cyber Security Principles
- Apply Webb's Depth of Knowledge levels and Marzano's 6-step Vocabulary Teaching to currently used activities and discussed strategies
- List ways they can model correct application of the Principles when using technology themselves, and how they can simplify the Principles with classroom design analogies.

Materials List:

GenCyber Cards

Pens

Webb's DOK reference charts

Marzano Six-Step Process for Vocabulary teaching

Guided Notes for class ideas

Word Wall Starters

How will you facilitate the Learning?

Session 1:

- 1) Begin with a Word Wall where key ideas/connections can be accumulated as our discussions progress, encouraging teachers to keep such an active reminder in their classrooms. Ask teachers to share other effective methods of **vocabulary teaching** (e.g. drawings/definitions on index cards, foldable notebooks, tech methods for 6/19/18).
- 2) Briefly discuss how the complex Cyber Security Principles terms can be made simpler for younger learners through the following **Physical Classroom Analogies:**
 - Stations/Centers (Domain Isolation)
 - Desks in rows, tables, formations (Modularity)
 - Room Door/Cabinet/Storage Bin/Box of Crayons (Layering)
 - Passwords/Student Id #s/User Id (Least Privilege, Info Hiding)

Helpers, Library and Guidance Office Aides (Least Privilege)

Behavior Rewards (Least Privilege)

Simple Signs or Symbol Use for Fire Escape Plans, Special Passes, Special Messages or Class Practices (Abstraction)

Lights vs. Screen vs. Computer (Process Isolation)

3) Play the originally suggested **GenCyber card game**.

Provide teachers answers for their decks.

Play other games/activities I created with the deck.

Then ask teachers to think of common card games that we could play with the deck (e.g. Rummy w/3 of a kind, GoFish with only 3 cards dealt at a time, Pokemon, Set, Concentration, I have...Who has, War? Poker? Crazy 8s? Solitaire?...)

4) Demonstrate one **active game** (Red Rover, Red Rover or Capture the Flag)

Then ask teachers to think of common active games that we could adapt to the practice the Principles (e.g. Duck, duck, goose; Mother May I; 7 UP; Chinese Freeze Tag, Scavenger Hunt, Trashketball, Breakout EDU, Charades, Dominos, Rube Goldberg devices ...)

Session 2:

1) Briefly discuss Piaget's contribution to our understanding of differentiating for students and encouraging higher order thinking skills. Transition into the more currently used phrase "DOK levels," made by Dr. Norman Webb.

2) Provide handout with DOK prompts and make the following suggestions for classroom activities:

DOK 1 – play "Win, Lose, Draw" (Define, Label, Match) or play "Headbands"-type game

DOK 2 – Categorize Principles related to hardware, software, processes (Two Truths and a Lie)

DOK 3 – Critique the use of Principles in our school OR Investigate other Principles on Internet
OR Revise the GenCyber Cards into a district-specific set of examples

DOK 4 – Apply Cyber Security principles to creation of an on-line game, phone app or skit;
Create interview questions for district's computer gurus

3) Discuss how our own use of technology in the classroom can lead to impromptu modeling of Cyber Security Principles in our own Teaching, without having to make complete lessons about the topic:

Strong Password Usage, Not allowing passwords to be saved when prompted on screen, Not providing personal info, Not enabling unnecessary privileges on cell phones like allowing access to contact list or current location, Logging off sites/computers when done...

4) Briefly share that the teachers in this combination camp are expected to create a lesson plan by Friday to share with all GenCyber participants nationwide. They can incorporate ideas presented today, technology-based ideas presented tomorrow, and/or ideas students will offer to them in our merged session with students on Wednesday.

Mapping to ALL Cyber Security First Principles:

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

Assessment of Learning:

TYPE:

Written Records

Oral Questioning

Lesson Plan

Name/Description:

word wall contributions, additions to guided notes as we discuss topics

Teachers offer additional examples, ask for clarification on difficult principles

Tested out on students Day 3,
Revised/submitted Day 5

Accommodations: N/A

Description of Extension Activities: N/A

Acknowledgements:

Dr. Norman Webb

Ms. Myra Collins

NSA GenCyber Cards