Lesson Plan

Grade: 11th  Subject: Cybersecurity  Date: August

Topic: Domain 1: Essential Security Principles

Lesson 1: Define Essential Security Principles

Lesson Duration: 3 days - 270 min

Learning Objectives:
1. Students will be able to understand, apply, and analyze Essential Security Principles.
2. Students will be able to understand, apply, and analyze common threats and vulnerabilities.
3. Students will be able to understand, apply, and analyze access management principles.
4. Students will be able to understand, apply, and analyze encryption.

Materials Needed:
- laptop or PC,
- paper,
- something to write with,
- projector

Props
- preset quizezz
- preset Kahoots
- Preset wheel
- strips of paper/bucket/stuffed ball

Lesson 1: Define Essential Security Principles

Structure / Activity: Structure is based on PBL
1. Keyword Quiz (5 minutes): QUIZEZZ
2. Hook (10 minutes): DEMO with PROPs
3. Pre-Test (15 minutes): WHEEL game
4. Activity/Labs (30 minutes): TOPICS
   - Assign subsections of the topic to groups of 3 students, use ChatGPT for project ideas:
     - Attack Vectors
     - Hardening
     - Defense-in-depth
     - CIA
     - Types of Attackers
     - Reasons of Attacks
     - Code of Ethics
5. Game (20 minutes): Hot Potato (through a ball around the room or use raffle tickets)
6. Recap (10 minutes): Kahoot and assign a new key word

Assessment: formal and informal
Lesson Plan

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Lesson 2: Explain Common Threats and Vulnerabilities

Structure / Activity: Structure is based on PBL
1. Keyword Quiz (5 minutes): QUIZEZZ
2. Hook (10 minutes): DEMO with PROPs
3. Pre-Test (15 minutes): WHEEL game
4. Activity/Labs (30 minutes): TOPICS
   Assign subsections of the topic to groups of 3 students, use ChatGPT for project ideas:
   - Malware and Ransomware
   - Denial of Service
   - Botnets
   - Social Engineering
   - Physical Attacks and Man-in-the-Middle
   - IoT Vulnerabilities and Insider Threats
   - Advanced Persistent Threat (APT)
5. Game (20 minutes): Hot Potato (through a ball around the room or use raffle tickets)
6. Recap (10 minutes): Kahoot and assign a new key word

Assessment: formal and informal

Materials Needed:
- laptop or PC,
- paper,
- something to write with,
- projector

Props
- preset quizezz
- preset Kahoots
- Preset wheel
- strips of paper/bucket/stuffed ball

Learning Objectives:
1. Students will be able to understand, apply, and analyze Essential Security Principles.
2. Students will be able to understand, apply, and analyze common threats and vulnerabilities.
3. Students will be able to understand, apply, and analyze access management principles.
4. Students will be able to understand, apply, and analyze encryption.

Topic: Domain 1: Essential Security Principles
Lesson 2: Explain Common T&V
Lesson Duration: 3 days - 270 min
Lesson 3: Access Management Principles

Structure / Activity: Structure is based on PBL
1. Keyword Quiz (5 minutes): QUIZEZZ
2. Hook (10 minutes): DEMO with PROPs
3. Pre-Test (15 minutes): WHEEL game
4. Activity/Labs (30 minutes): TOPICS
   Assign subsections of the topic to groups of 3 students, use ChatGPT for project ideas:
   - AAA
   - RADIUS
   - Multifactor Authentication (MFA)
   - Password Policies
5. Game (20 minutes): Hot Potato (through a ball around the room or use raffle tickets)
6. Recap (10 minutes): Kahoot and assign a new key word

Assessment: formal and informal

Materials Needed:
- laptop or PC,
- paper,
- something to write with,
- projector

Props
- preset quizizz
- preset Kahoots
- preset wheel
- strips of paper/bucket/stuffed ball

Learning Objectives:
1. Students will be able to understand, apply, and analyze Essential Security Principles.
2. Students will be able to understand, apply, and analyze common threats and vulnerabilities.
3. Students will be able to understand, apply, and analyze access management principles.
4. Students will be able to understand, apply, and analyze encryption.

Grade: 11th
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Grade: 11th  Subject: Cybersecurity  Date: August

Topic: Domain 1: Essential Security Principles  Lesson 4: Explain Encryption Methods and Applications

Lesson Duration: 3 days - 270 min

Learning Objectives:
1. Students will be able to understand, apply, and analyze Essential Security Principles.
2. Students will be able to understand, apply, and analyze common threats and vulnerabilities.
3. Students will be able to understand, apply, and analyze access management principles.
4. Students will be able to understand, apply, and analyze encryption.

Materials Needed:
- laptop or PC,
- paper,
- something to write with,
- projector

Props
- preset quizizz
- preset Kahoots
- Preset wheel
- strips of paper/bucket/stuffed ball

Lesson 4: Explain Encryption Methods and Applications

Structure / Activity: Structure is based on PBL
1. Keyword Quiz (5 minutes): QUIZEZZ
2. Hook (10 minutes): DEMO with PROPs
3. Pre-Test (15 minutes): WHEEL game
4. Activity/Labs (30 minutes): TOPICS
   - Assign subsections of the topic to groups of 3 students, use ChatGPT for project ideas:
     - Types of Encryption
     - Hashing
     - Certificates
     - Public Key Infrastructure (PKI)
     - Strong vs. Weak Encryption Algorithms
     - State of Data and Appropriate Encryption (Data/transit, rest, use)
     - Protocols that use Encryption
5. Game (20 minutes): Hot Potato (through a ball around the room or use raffle tickets)
6. Recap (10 minutes): Kahoot and assign a new key word

Assessment: formal and informal