Cyber4Schools template lesson plans

Lesson basics according to [O3 are explained here.](https://www.cyber4schools.eu/results/)

|  |  |
| --- | --- |
| **Lesson 1** | **CS theory** |
| Goals | explain key concepts of cybersecurity (see Keywords for further content development) |
| Expected outcome | Skills and knowledge acquired by the participants at the end of the training - be able to:  ● explain key concepts of cybersecurity (see Keywords for further content development) |
| Instruction and structure | Topic 1: CyberSecurity in EU and learning possibilities  Teacher introduces EU Digital Competence Model  Students will evaluate their Competence skills  Discussion - expectations from teachers, students and industry  Self-test for the students (9 questions)  Topic 2: Cyber Security Basics  Discuss examples of CIA triad with students  Discuss terminology meaning with students  Lecture of examples: Malware, hacks  Videos: about Windows and Linux security  Topics 3: Actors in CyberSecurity  Lecture: White, Gray and Black hat concept  Videos: different hats and anonymous  Exercise: who is who, search (Google image search) |
| Learning materials | Slides 1  A Guide to Cyber Security  Teacher reading material (additional)  Report O1 and O3  Student print outs (self evaluation, who is who) |

|  |  |
| --- | --- |
| **Lesson 2** | **Pre-game** |
| Goals | This module introduces cybersecurity commonly known as gaming type “Capture the flag” (CTF), different goals and needs when one plays games (gamer types). This module introduces the Cyber4Schools project and the developed game mechanics (how it's played as a player (blue and red gamer). Learn how to use supporting materials (topics in the game), hints, etc. |
| Expected outcome | Skills – be able to:  ● Explain different CTF types  ● Give examples of websites where to learn and get experiences of CTFs  ● Understand different gamer types and their goals while playing the game  ● Evaluate their gamer type  ● Knows how to play the game, get help, use the game mechanics |
| Instruction and structure | Topic 1: Gamer types  Video: Gamer type  Students evaluate your gamer type  Discuss and compare your type to others  Topic 2: Types of games  Lecture, examples and discussion about different kind of games  Students learn and choose their role on the game of CTF  Video: European Cyber Security Challenge  Topic 3: Skills in CTF and possibilities to learn  Video: cyber security skills  CTF additional learning resources and environments  Optional:  Topic 4: Simulation of Cyber4Schools scenario  Playing game scenario table-top version from RED and BLUE point of view (if needed)  Topic 5: Simulation of Cyber4Schools scenario  Investigating Game Mechanics with teacher (if needed) |
| Learning materials | Slides 2  Teacher reading material (additional)  Cyber4Schools game scenario (for the teachers)  How to play Cyber4Schools (for the teachers)  Student print out (evaluate your gamer type) |

|  |  |
| --- | --- |
| **Lesson 3** | **OnGame** |
| Goals | This module gives hands-on experience in the game as a red and blue player. |
| Expected outcome | Specific skills  Skills - be able to:  ● Play the game as a player (red)  ● Play the game as a player (blue) |
| Instruction and structure/Learning materials | <https://www.cyber4schools.eu/test-our-game/>  Student print out (Book of Instructions) |

|  |  |
| --- | --- |
| **Lesson 4** | **After-Game** |
| Goals | This module is helping to wrap up the learning for the students, share ideas and emotions, and ask questions about how one could solve the issues in the game differently and their need for future learning possibilities |
| Expected outcome | Skills - be able to:  ● Explain how the game is linked to real life and skills that were discussed in module 1.  ● Wrap-up the learning for the students (self-evaluation sheet) |
| Instruction and structure | Teacher: explains the lessons learnt from the game and its relations to real world  Students: do a self-evaluation sheet  Teacher: discusses the ethical behavior (skills learned from the game and how to use them to become ethical hacker)  Teacher shows where one can study cyber security in EU  Discussion - what the future career shape would be and how it differs from the parents/grandparents  Investigate occupations of Cyber Security |
| Learning materials | Slides, Student print out |