Lesson plan

CODING GIRL
GIRLS JUST WANT TO HAVE FUN CODING

Topic	Safety and technology
Block name	*Secure your world – an app for safe online behavior*

Age category 13 – 15	**Duration** 135 minutes	**Number of teaching hours** 3

Student-centered educational goals (content and performance standards)

Content standard:

- Principles of safe online behavior.
- Basics of personal data protection, phishing, hoaxes.

Performance standard:

- Design an app that educates about cybersecurity.
- Identify threats and ways to protect.
- Collaborate and reflect on the benefits of the solution.

Integration of subjects:

- Informatics,
- Civic education,
- Slovak language

21st century skills:

- Critical thinking,
- Digital literacy,
- Cooperation

Didactic aids and teaching techniques:

- Computers with internet,
- MIT app inventor,
- Canva,
- Mobile phones

References / Resources (videos, methodologies):

https://appinventor.mit.edu

Motivational phase:

Duration: 40 minutes

"What can happen if we forget about online safety?"

Introductory video and discussions:

- *The teacher will show the video Internet Safety*
- *The viewing is followed by a moderated discussion about the most common Internet threats - students share personal experiences with fake profiles, fraudulent emails, or insecure websites.*
- *The teacher writes keywords on the board: password, phishing, virus, cyberbullying, cookies, digital footprint.*

Group activity – "What would happen if..."

- *Groups will create short scenarios describing risky situations (e.g. revealing a password, clicking on an unknown link, sharing personal data).*
- *The others guess what mistakes the characters made and how they could have avoided them.*

Defining the problem:

- *Students formulate the question together: "How could a mobile app help people behave more safely online?"*
- The teacher summarizes that the goal of the lesson will be to design and create an educational application that warns about the risks of the Internet and teaches proper behavior.

Exposure phase:

Duration: 50 minutes

Goal:

- Students will understand the basic principles of cybersecurity and apply them when designing their own educational application.
- They develop the ability to combine theoretical knowledge about data protection with the practical creation of a digital tool that helps prevent risky behavior on the Internet.

Science Integration:

- Students connect knowledge from civic and media education - understanding the concepts of identity, trustworthiness, manipulation, and online responsibility.
- They analyze real examples of attacks (e.g. phishing, fake contests, viral hoaxes).
- They discuss how technologies (e.g., two-factor authentication, encryption) are used to protect users.
- The goal is to show that security principles are not only technical, but also ethical and social.

Informatics integration:

Students will learn the basic principles of mobile application development in the MIT App Inventor tool:

- working with random data (passwords) generation,
- creation of information blocks (safety tips, warnings),
- implementation of interactive elements (quiz, "Find out more" button),
- basic conditional statements (if – then) responding to user responses.
- In this way, they connect digital skills with logical thinking and user interface (UI/UX) principles.

Activities:

Demonstration and analysis (10 min)

- The teacher will demonstrate the creation of a simple password generator in MIT App Inventor.
- Explains why a strong password includes uppercase/lowercase letters, numbers, and symbols.

Group work (30 min)

Students design an application with the following elements:

- strong password generator,
- short safety tips,
- mini quiz on cybersecurity (3–5 questions).
- The teacher helps with block logic and testing.

Testing and adjustments (10 min)

- Students test applications on phones, verifying the functionality and clarity of the interface.
- Groups discuss how their app could help classmates or parents.

Fixation phase (fixing and deepening):

Duration: 45 minutes

"From safety to practice"

Presentation of outputs:

- *Each group will present their application prototype, explain its functions and benefits for ordinary users.*
- *Other students give feedback - what would improve the app, what is clear, what is missing.*

Visual summary:

- *Using Canva, students will create an infographic "5 Rules for a Safer Internet" that can be printed or posted on the school website.*

Reflexes:

- *The teacher opens the discussion:*

- *How does technology help you protect yourself online?*

- *What have you learned about your own behavior online?*

Student evaluation:

- Originality and functionality of the application (40%)

- Understanding security principles (30%)

- Teamwork and presentation (30%)

Attachments: