LEARNING BOX OF UNPLUGGED ACTIVITIES

The lost passwords

In this unplugged activity, participants face a common everyday problem: managing multiple online accounts while repeatedly forgetting their passwords. They are given a set of fictional accounts (e.g., email, banking, shopping, streaming, work platforms) along with different password hints, patterns, and partial clues.

Participants must analyze the information, identify relationships between accounts and passwords, and design a structured way to recover, organize, or remember them more effectively.

Target Group

- ☑ Low-skilled adults with low digital competences
- ☐ Low-skilled adults with limited formal education or qualifications
- ☐ Low-skilled adults with low participation in lifelong learning / training opportunities

Learning Objectives

- Organize and structure multiple pieces of information related to different accounts and passwords.
- Apply decomposition to break down a complex memory and information problem into smaller parts.
- Use abstraction to focus on relevant cues while ignoring distracting or irrelevant details.
- Develop a systematic, step-by-step strategy for managing and retrieving information.

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Theme

Digital identity management and information organization in everyday life

Duration

60mins - 90mins

Level

Beginner

Computational Thinking Steps Used

- ☑ Decomposition
- ☑ Pattern recognition
- ☑ Abstraction
- ☑ Algorithmic thinking

Methodological Approach

- ☐ Gamification
- ☑ Challenge-Based Learning
- ☐ Collaborative learning
- ☐ Experiential learning

Competence Areas

a) Innovation Competences

- ☐ Creativity
- ☑ Critical thinking
- ☑ Problem solving
- ☐ Communication
- ☐ Collaboration

b) Information Literacy Competences

- ☑ Ability to access, understand and critically analyse information
- ☑ Interpretation of digital and visual content
- ☐ Awareness of media influence and biases

c) Life and Career Competences

- ☑ Flexibility and adaptability
- ☑ Initiative and autonomy
- ☐ Sociability and intercultural competence
- ☐ Productivity
- ☐ Leadership and responsibility

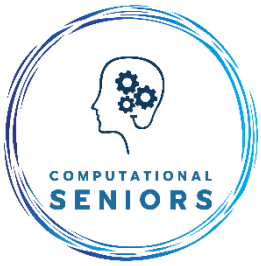
Learning Outcomes

- Organize multiple items and associated information into a clear and structured system
- Identify patterns and relationships between elements such as clues, categories, or types of information
- Apply decomposition to simplify a complex information-management problem
- Apply abstraction to focus on relevant clues while ignoring irrelevant details
- Design a systematic strategy for storing and retrieving information efficiently

Notes

- Use realistic but fictional accounts (email, banking, shopping, streaming, work tools) to make the scenario relatable.
- Ensure password clues are varied in format (patterns, associations, partial hints, rules) to encourage different reasoning strategies.

- Avoid making the task purely a memory exercise, the focus should be on structuring and organizing information.
- Include some ambiguous or overlapping clues to stimulate discussion and justification of choice.



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The lost password

Step 1: Explore the accounts and clues

Participants are presented with a set of fictional online accounts (e.g., email, banking, shopping, streaming, work platforms), each associated with partial password hints, rules, or memory clues.

They begin by listing and organizing all accounts and their corresponding clues in a structured way. The goal is to understand what information is available and what is missing or unclear.

Computational thinking focus: Decomposition, breaking the problem into individual accounts, clues, and constraints to make it more manageable.

Step 2: Identify patterns and relationships

Participants analyze the clues to find patterns, similarities, or underlying rules that may help reconstruct or remember the passwords. This could include recurring themes, structures, or associations between accounts and hints.

They also compare different clues to detect inconsistencies or overlaps that could help refine their understanding.

Computational thinking focus: Pattern recognition and abstraction, identifying meaningful structures in the data and focusing only on relevant information for solving the problem.

Step 3: Build a system to organize passwords

Participants design a structured method for managing and retrieving passwords. Instead of solving each password individually, they create a general strategy (e.g., grouping by category, using rules, or designing a memory system).

They explain and justify their system, showing how it helps reduce confusion and improve retrieval efficiency.

Computational thinking focus: Algorithmic thinking, developing a step-by-step, reusable strategy for organizing and managing information effectively.

ACTIVITY CARDS

The lost passwords

Card Categories

User profile / Aim

Accounts

Phases / Challenges

Priority Levels

Essential
Extremely necessary to take into consideration

High
Importance

Medium
Helpful to take into consideration

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Print and cut the cards on the following slides to use in the activity.

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USER PROFILE: Laura

Uses many online accounts

Does not use a password manager

Reuses similar patterns without order

Has forgotten several recent keys

AIM

Analyze different digital accounts

Identify password patterns

Relate partial clues

Design a secure system

Reduce digital access chaos

Account

PERSONAL EMAIL – MailNova

CLUES:

It contains the year of birth

Includes the name of a pet

Uses a final "!" symbol

2 minutes

Account

ONLINE BANK – SafeBank

CLUES:

It starts with “SB”

Includes 4 numbers of an important date

Ends with a "#" symbol

2 minutes

Account

ONLINE SHOP – ShopLoop

CLUES:

Includes the city name

Contains “2024”

Uses a word related to shopping

2 minutes

Account

STREAMING – CineFlare

CLUES:

Name of a favorite movie

Includes 2 consecutive numbers

Ends with "@"

2 minutes

WORK – WorkSphere

CLUES:

Initials of the company name

Includes a 3-letter code

Contains a fixed number (7)

2 minutes

CLOUD– CloudNest

CLUES:

Word related to "cloud"

Current or near year

Includes a hyphen "–"

2 minutes

TEAM MISSION

1. Detect common patterns

2. Classify accounts: personal, financial, leisure, work

3. Design a system for remembering without chaos

What elements are repeated? Is there a common logic?

Priority: Essential

Recommendations

FINAL KEYS

Do not reuse identical passwords

Use symbols and numbers with personal meaning

Consider password managers

Review and update regularly

DETECT PATTERNS

What elements are repeated?

Is there a common logic between the clues?

Symbols at the end, date numbers, keywords

TIME: 5 minutes

Priority: Essential

CLASSIFY ACCOUNTS

Categories: Personal, Financial, Leisure, Work

Match each account with its category

How does the category influence safety?

TIME: 5 minutes

Priority: Essential

DESIGN A SECURE SYSTEM

Clear and personalized patterns

Clues that help without exposing data

Encrypted lists, apps, or notes

Maintain order and keep records up to date

TIME: 7 minutes

Priority: High