LEARNING BOX OF UNPLUGGED ACTIVITIES

The resource allocation paradox

In this unplugged gamified activity, participants take on the role of adults managing competing real-life responsibilities under strict limitations. They must allocate a limited resource (time, money, or energy) across essential adult commitments such as rent or mortgage payments, family responsibilities, healthcare needs, work demands, transportation costs, and personal well-being. The key challenge is that not all needs can be fully satisfied, forcing participants to make difficult trade-offs.

The activity is structured as a game with “allocation rounds,” where each round introduces new constraints or unexpected events (e.g., salary changes, emergency expenses, new obligations, or time reductions). Participants or teams earn points based on how sustainable, balanced, and well-justified their allocation decisions are.

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

- Analyze complex real-life scenarios involving constraints, competing demands, and limited resources
- Apply decomposition to break down complex problems into meaningful categories and components
- Identify patterns in everyday situations to support reasoning and decision-making
- Apply abstraction to focus on key decision-making variables such as urgency, impact, and importance.
- Develop and justify structured strategies for

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Theme

Resource scarcity and decision-making in adult life contexts

Duration

60mins

Level

Beginner

allocating limited resources effectively

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 and prioritize competing real-life demands within constraints of limited resources
- Identify patterns in recurring expenses, time pressures, and responsibilities across contexts
- Apply decomposition and abstraction to simplify complex everyday problems into manageable components
- Make justified trade-offs between conflicting priorities based on explicit criteria
- Design and iteratively adjust a structured resource allocation strategy over multiple cycles

Notes

- Ensure the scenario feels realistic and relatable for an adult audience (housing, work, healthcare, family, transport, savings).

- Clearly communicate that scarcity is intentional: participants cannot satisfy all needs, and trade-offs are unavoidable.
- Design allocation rounds with increasing complexity (e.g., stable start, small disruptions, major unexpected events).
- Include both predictable and unpredictable events to simulate real-life uncertainty.
- Avoid “optimal solutions”; focus on reasoning quality and justification of choices.
- Encourage participants to explicitly state priorities (e.g., survival needs vs. long-term goals vs. quality of life).

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Step 1: Set up your life scenario and resources

Participants are assigned an adult life profile with a fixed amount of resources (e.g., monthly income, available time, or energy). Each profile includes essential and recurring responsibilities such as rent or mortgage, utilities, food, transport, work commitments, family care, and basic personal needs.

They organize these elements into clear categories to understand what must be covered and what is flexible. This establishes the baseline for all future decisions in the game.

Computational thinking focus: Decomposition, breaking down a complex life situation into structured resource and demand categories.

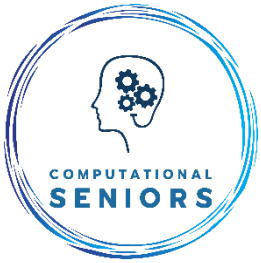
Step 2: Play allocation rounds

The resource allocation paradox

The activity unfolds in rounds. In each round, participants must allocate their limited resources across competing demands. The facilitator introduces new "event cards" such as unexpected expenses (medical bills, repairs), changes in income, or new responsibilities.

Participants must adjust their allocations after each round, making trade-offs and justifying their decisions under changing conditions. Points can be awarded based on stability, balance, and consistency of reasoning.

Computational thinking focus: Pattern recognition, identifying recurring pressures, cost patterns, and priority conflicts over time. Abstraction, focusing on essential factors such as urgency, necessity, and impact while ignoring non-critical details.



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Step 3: Design and justify your allocation strategy

Based on the previous rounds, participants develop a final structured strategy for managing their resources sustainably. This includes defining priorities, rules for allocation, and approaches for handling unexpected events.

Teams or individuals present their strategy and explain the logic behind their trade-offs and decisions, reflecting on what they would adjust in real life.

Computational thinking focus: Algorithmic thinking, creating a clear, repeatable decision-making strategy to manage limited resources effectively over time.

The resource allocation paradox

ACTIVITY CARDS

The resource allocation paradox

Card Categories

Profile cards

Resources

Responsibilities

Events

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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SINGLE PARENT

Monthly Budget: €1,600

Free Time: 15 hours/week

Energy Level: Medium

One child

Full-time job

YOUNG PROFESSIONAL

Monthly Budget: €2,000

Free Time: 12 hours/week

Energy Level: High

Rent

Full-time employment

OLDER ADULT

Monthly Budget: €1,300

Free Time: 30 hours/week

Energy Level: Medium

Healthcare appointments

Household expenses

Fixed pension income

PART-TIME WORKER AND STUDENT

Monthly Budget: €1,100

Free Time: 10 hours/week

Energy Level: Low

Tuition fees

Rent

Part-time job

BUDGET TOKENS

Use these to pay for essential and optional expenses.

TIME TOKENS

Use these to complete responsibilities and personal activities.

ENERGY TOKENS

Use these to represent physical and mental effort.

HOUSING

Cost: €700

Priority: Essential

Priority: Essential

FOOD

Cost: €300

Priority: Essential

Priority: Essential

TRANSPORT

COST: €120

TIME: 3 HOURS/WEEK

Time: 3h/week

HEALTHCARE

Cost: €150

Energy: 1 token

Energy: 1 token

CHILDCARE

Time: 8 hours/week

Energy: 2 tokens

Energy: 2 tokens

WORK

Time: 35 hours/week

Generates income.

Generates income

EDUCATION OR TRAINING

Time: 5 hours/week

Improves future opportunities.

Opportunities

SAVINGS

Choose how much to save.

Improves long-term financial stability.

Long-term

UNEXPECTED MEDICAL EXPENSE

Pay €400 immediately.

-€400

SALARY INCREASE

Receive €250.

+€250

REDUCED WORKING HOURS

Your income decreases by €300.

-€300

CAR BREAKDOWN

Pay €350 or spend additional time using public transport.

-€350

FAMILY EMERGENCY

Lose 5 Time Tokens this round.

-5 Time

FREE COMMUNITY SERVICE

Receive free childcare or transport this round.

Free service

UTILITY BILLS INCREASE

Housing costs increase by €100.

+€100

PERSONAL ACHIEVEMENT

Gain 2 Energy Tokens.

+2 Energy