LEARNING BOX OF UNPLUGGED ACTIVITIES

Garden Master: The Companion Planting Challenge

This unplugged activity leverages seniors' traditional knowledge of gardening to teach complex logical sequencing and spatial optimization. Participants are tasked with designing a garden layout on a physical map, considering environmental factors like sun exposure and water access. Using cards that represent different plants, they must apply the rules of "companion planting"—where certain plants help each other grow while others inhibit growth. The activity introduces computational thinking by requiring participants to manage multiple constraints (if-then rules) to create an efficient, high-yield garden "algorithm" without digital tools).

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

- To develop spatial planning skills by managing multiple environmental constraints.
- To apply logical rules (if-then statements) to a physical organization task.
- To optimize resource allocation (water and space) through strategic planning.

Competence Areas

a) Innovation Competences

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

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Theme

Sustainable gardening, resource management, and spatial logic

Duration

60 - 90 min

Level

Intermediate

Computational Thinking Steps Used

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

Methodological Approach

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

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

By the end of the activity, participants will be able to:

- Successfully decompose a large spatial task into manageable sub-sectors.
- Design a garden layout that respects at least 5 different plant-interaction rules.
- Demonstrate "debugging" by identifying and fixing conflicting plant placements

Notes

- Materials Needed: Large paper grid (the garden map) with symbols for a water tap and sun/shade areas. Physical "Plant Cards" (showing a picture, water needs, and a list of "Friends" and "Enemies"). "Harvest Point" tokens.
- Facilitator Notes: This activity honors the existing expertise of seniors. Encourage them to share *why* they think a plant belongs somewhere before checking the cards. If a conflict occurs (e.g., a "Bad Neighbor" pairing), frame it as a "coding bug" that needs to be solved by moving one of the components to a different sector.

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Step 1: Introduction and the "Green" Challenge

Present the empty garden map. Introduce the challenge: "You have been given a neglected plot of land. Your goal is to design a Garden Algorithm—a layout where every plant is in the perfect spot to help its neighbours and stay hydrated with the least effort"

Duration app. 15 minutes

Step 2: Decomposition - Mapping the Zones

Participants examine the map. They must first identify the "properties" of the land. They use markers to outline sectors: the "Wet Zone" (near the tap), the "Sunny Zone," and the "Shady Zone." By breaking the big field into these smaller sub-problems, the task becomes manageable.

Duration app. 15 minutes

Step 3: Pattern Recognition –Sorting the Seedlings

In this step, participants use their previous experience and gardening intuition to identify recurring patterns in plant requirements. Before they proceed to design the entire garden, they must analyze the characteristics of individual seedlings and group them according to specific logical rules.

Participants analyze the plant cards, looking for common traits (e.g., "all nightshade vegetables love full sun," "legumes enrich the soil with nitrogen").

Instead of arranging the plants randomly, participants sort the seedlings into groups that have identical environmental needs or complement each other perfectly (companion planting).

Duration app. 20 minutes

COMPUTATIONAL SENIORS

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Step 4: Algorithmic Thinking - Executing the Layout

This is the core logical task. Participants place the cards on the map one by one. For every placement, they must check the "if-then" rules on the card. (e.g., "If I place the Tomato here, I must check if its neighbor is a Basil [Bonus Point] or a Potato [Penalty]"). They must adjust the entire sequence if a rule is broken.

Duration app. 25 minutes

Step 5: The Harvest Audit & Debrief

The facilitator (or another team) "runs" the garden algorithm. They check the final layout for efficiency and rule compliance. Points are awarded for "Harvest Points" and "Water Efficiency." Conclude by discussing how this process of managing rules and zones is exactly how software manages data or how complex logistics work in the real world.

Duration app. 15 minutes.

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