# LEARNING BOX OF UNPLUGGED ACTIVITIES

## The improved sleep schedule

In this unplugged activity, participants are presented with a clear challenge:

“Improve your sleep quality in one week despite real-life constraints.”

Each participant or team receives a profile with poor or inconsistent sleep habits (e.g., late-night screen use, irregular schedule, low energy during the day) along with fixed constraints such as work hours, social commitments, or stress levels.

The challenge is to design and iteratively improve a sleep routine that leads to better rest quality. Participants must decide which variables to change (bedtime, pre-sleep routine, environment, habits) and test their decisions across simulated “days.”

At each stage of the challenge, they receive feedback (e.g., energy level, sleep quality score, difficulty waking up), which forces them to reassess and adapt their strategy. Some changes may improve results, while others may have little or even negative impact.

The goal is not to find a perfect solution immediately, but to progressively refine a strategy that improves sleep outcomes over time.

### 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

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## Theme

Improving and everyday task

## Duration

45 mins

## Level

Beginner

## Computational Thinking Steps Used

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

## Methodological Approach

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

## Learning Objectives

- Break down a complex problem into smaller components by identifying key variables and their relationships
- Identify patterns in data or behaviors and use them to inform decisions
- Apply abstraction by selecting the most relevant factors and ignoring unnecessary details
- Design and describe a step-by-step solution (algorithm) to address a problem
- Test and refine a solution based on feedback and observed outcomes

## 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

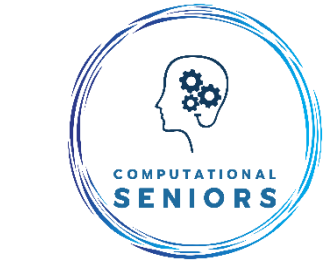
## Learning Outcomes

- Analyze complex situations by identifying relevant factors and the relationships between them
- Recognize and interpret patterns in behaviors or data across different contexts
- Apply abstraction to isolate key variables and reduce complexity in problem-solving

- Design and iteratively refine step-by-step solutions (algorithms) to address a problem
- Evaluate outcomes and adapt strategies based on feedback, results, and constraints

## Notes

- Frame the activity clearly as an iterative challenge, not a one-time planning exercise. Participants should expect to test, fail, and adjust.
- Define sleep "feedback" in a simple, consistent way (e.g., energy level, sleep quality score, mood) so participants can compare changes across rounds.
- Keep variables limited but meaningful (e.g., bedtime, screen use, caffeine, environment) to avoid cognitive overload.
- Ensure that improvements are not linear or obvious—some changes should have delayed or mixed effects to encourage reflection.
- Encourage participants to justify each adjustment rather than randomly changing variables.




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## The improved sleep schedule

### Step 1: Understand the sleep challenge

Participants are presented with the challenge: Improve your sleep quality in one week.

Each participant/team receives a profile with current sleep issues (e.g., late bedtime, poor sleep quality, fatigue during the day) and real-life constraints such as work schedules, social obligations, and limited flexibility.

They identify the current situation and decide which sleep-related variables they can potentially modify (e.g., bedtime, screen use before sleep, evening routine, environment).

*Computational thinking focus:* Abstraction, focusing on the key factors that influence sleep quality and ignoring less relevant details.

### Step 2: Test and adjust your sleep strategy

The challenge unfolds over several simulated "days." In each round, participants apply changes to their sleep routine (e.g., earlier bedtime, reduced screen time, relaxation habits).

After each round, they receive feedback such as sleep quality, energy levels, and ease of waking up. Based on this feedback, they must evaluate what is working and adjust their strategy.

*Computational thinking focus:* Pattern recognition, identifying relationships between routine changes and sleep outcomes over time.

COMPUTATIONAL SENIORS

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## Step 3: Build your optimized sleep routine

After several rounds, participants design a final improved sleep schedule that aims to maximize rest quality within the given constraints.

They present their final routine and explain which changes were most effective, which were not, and how they adapted their strategy throughout the challenge.

*Computational thinking focus:* Algorithmic thinking, creating a structured, repeatable routine based on interactive testing and feedback.

## The improved sleep schedule

# ACTIVITY CARDS

## The improved sleep schedule

### Card Categories

**Profiles**

**Habits**

**Contrains**

### 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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## BUSY WORKER

**Current Habits**

Goes to bed after midnight

Uses a mobile phone before sleeping

Drinks coffee late in the afternoon

**Constraints**

Starts work at 7:30 a.m.

Has a long commute

## PARENT OF TWO CHILDREN

**Current Habits**

Frequently interrupted sleep

Irregular bedtime

Often feels tired

**Constraints**

Young children wake up early

Limited personal time

## STUDENT

**Current Habits**

Studies late at night

Sleeps in on weekends

Drinks energy drinks

**Constraints**

Evening classes

Assignment deadlines

## SHIFT WORKER

**Current Habits**

Sleep schedule changes every week

Uses screens before bed

Sleeps in a noisy environment

**Constraints**

Rotating work shifts

Limited control over schedule

## GO TO BED 30 MINUTES EARLIER

**Possible Effect:**

Improves sleep consistency.

## STOP USING SCREENS ONE HOUR BEFORE BED

**Possible Effect:**

May improve sleep quality.

## AVOID CAFFEINE AFTER 4 P.M.

**Possible Effect:**

May help you fall asleep more easily.

## CREATE A RELAXING BEDTIME ROUTINE

**Examples:**

Reading, stretching, listening to calming music.

## KEEP THE BEDROOM DARK AND QUIET

**Possible Effect:**

Improves sleep environment.

## EXERCISE DURING THE DAY

**Possible Effect:**

May improve sleep quality.

## KEEP THE SAME WAKE-UP TIME EVERY DAY

**Possible Effect:**

Improves body rhythm.

## AVOID HEAVY MEALS BEFORE BED

**Possible Effect:**

Improves comfort during sleep.

## STRESSFUL DAY

You find it difficult to relax before bedtime.

## LATE WORK MEETING

You must stay awake one extra hour tonight.

## FAMILY COMMITMENT

Your evening routine is interrupted.

## POOR WEATHER

You cannot exercise outdoors today.

## SOCIAL EVENT

You arrive home later than usual.

## BUSY MORNING TOMORROW

You must wake up one hour earlier.