LEARNING BOX OF UNPLUGGED ACTIVITIES

Urban Mobility: Choosing the Best Route in a City

This unplugged activity helps learners develop decision-making skills for navigating urban environments. Participants work with a city map description, transport options reference table, and written travel scenarios — all provided at the end of this document. They analyze different routes, compare alternatives, and decide on the most efficient option based on time, cost, and convenience. The activity simulates real-life challenges such as traffic congestion and limited parking while applying computational thinking strategies.

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

- Understand different transportation options in a city
- Compare routes based on time, cost, and convenience
- Recognize traffic and mobility patterns
- Develop strategies for efficient route planning
- Apply computational thinking to everyday travel decisions

Competence Areas

a) Innovation Competences

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

Co-funded by the European Union

This project has been co-financed with support from the European Commission's ERASMUS+ programme. This publication reflects only the views of its authors, and neither the European Commission nor SEPIE can be held responsible for any use that may be made of the information contained herein.

Theme

Urban mobility and route planning

Duration

75 minutes

Level

Beginner

Computational Thinking Steps Used

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

Methodological Approach

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

☑ 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

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

- Break down travel options into manageable components
- Identify patterns in traffic and transport availability (e.g., rush hours, weekends)
- Focus on key factors affecting route choice (time, cost, accessibility)
- Create simple decision rules for selecting the best route
- Make informed and efficient travel decisions

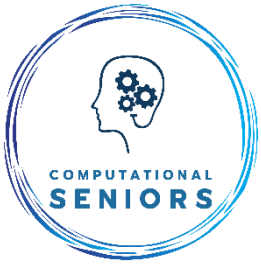
Notes

- City Map Description and Transport Options Table (see end of document): A text description of the fictional city of Midvale and a table comparing all four transport modes are provided below — no printed maps or cards needed.

- Travel Scenario Descriptions (see end of document): Three written scenarios are included — a morning commute, a weekend family outing, and an urgent journey in bad weather. Participants read these directly.

- Encourage group discussion and justification of route choices

- Facilitators can increase complexity by adding constraints (e.g., delays, budget limits, limited transport options)



Co-funded by
the European Union

Urban Mobility: Choosing the Best Route in a City

Step 1: Decomposition of Travel Options

Participants refer to the City Map Description and Transport Options Table at the end of this document. The map describes the fictional city of Midvale with five key areas and routes; the table compares walking, bicycle, bus, and car on speed, cost, and suitability. They also select one of the three Travel Scenario Descriptions provided.

They are asked to:

- Identify all available transportation options for the journey
- Break down the trip into key components, such as:
  - Distance and route segments
  - Estimated travel time
  - Cost (fuel, tickets, parking)
  - Convenience (comfort, accessibility)
- Compare at least two alternative routes for the same destination

Facilitator support:

- Ask guiding questions like: “What are all the possible ways to get there?”, “What factors matter most?”
- Encourage participants to think about real-life constraints (time, budget, physical ability)

This step helps participants analyze a journey by breaking it into clear and comparable elements.

Step 2: Pattern Recognition

Participants read and compare the three Travel Scenario Descriptions at the end of this document (Scenario A: Morning Rush Hour Commute; Scenario B: Weekend Leisure Outing; Scenario C: Urgent Journey in Bad Weather), identifying how conditions and optimal choices differ across each.

They are asked to:

- Identify patterns in urban mobility, such as:
  - Traffic congestion during peak hours
  - Delays or frequency of public transport
  - Parking availability in busy areas

    - Parking availability in busy areas
- Recognize how external factors (weather, time of day, events) influence travel conditions
- Discuss how these patterns affect the efficiency of each transport option

Facilitator support:

- Prompt reflection: “When is traffic worst?”, “When is public transport more reliable?”
- Highlight how recognizing patterns helps predict travel time and avoid problems

This step helps participants understand recurring mobility patterns and anticipate challenges.

Step 3: Route Selection Strategy (Algorithmic Thinking)

Participants develop a set of simple decision rules to choose the best route based on different conditions.

They should:

- Create clear rules such as:
    - “If traffic is heavy, avoid driving and use public transport”
    - “If distance is short, choose walking or cycling”
    - “If time is limited, select the fastest option regardless of cost”
- Organize their decision-making into a step-by-step process, for example:
    1. Identify destination and available options
    2. Check time constraints
    3. Compare cost and convenience
    4. Consider external conditions (traffic, weather)
    5. Select the best route

Finally, participants:

- Apply their rules to the given scenario
- Present their chosen route and explain their reasoning
- Compare solutions with other groups and discuss alternative strategies

Co-funded by the European Union

Urban Mobility: Choosing the Best Route in a City

Facilitator support:

- Encourage realistic thinking: “Would this choice work every day?”
- Introduce challenges (e.g., delays, road closures) and ask how participants would adapt

This step helps participants develop structured, logical approaches to everyday travel decision-making.

Facilitator Guidance

Before the activity

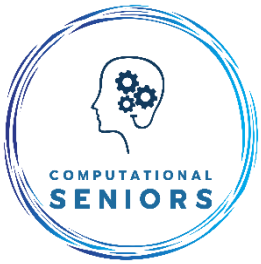
Start by asking participants how they usually choose the best way to travel around their city. Encourage discussion about different transport options such as walking, public transport, cycling, or driving, and the factors that influence their decisions (time, cost, traffic, parking, or weather). Explain that there is rarely a single "best" route and that decisions often depend on changing conditions.

During the activity

Encourage participants to compare multiple travel options before making their final decision. Ask questions such as: "What changes during rush hour?", "Would your decision be different if it were raining?", or "Which option saves the most time or money?" If groups finish quickly, introduce additional constraints such as roadworks, delayed buses, limited parking, or a reduced travel budget, and ask them to revise their plans accordingly. Encourage participants to justify every decision they make.

After the activity

Invite each group to present its chosen route and explain the factors that influenced the decision. Compare different strategies and discuss why different groups may have selected different solutions for the same journey. Highlight that effective route planning requires considering multiple variables and adapting decisions when circumstances change. Reinforce how



Co-funded by
the European Union

Urban Mobility: Choosing the Best Route in a City

computational thinking supports efficient decision-making in everyday travel.

City Map Description

The activity takes place in the fictional city of Midvale. Use this description in all three steps to plan routes and compare options.

City Centre (Area A): The main business and shopping district. Heavy traffic on weekdays 7:30–9:00 am and 5:00–7:00 pm. Parking costs €3/hour. Bus lines 1, 3 and 5 stop here. Cycling lanes on main roads. 10-minute walk from the Central Train Station.

Residential Neighbourhood (Area B): Quiet suburb 3 km from the city centre. Free street parking. Bus line 3 every 20 min (weekdays) / 40 min (weekends). A flat 3 km cycling path links Area B directly to Area A.

Hospital and Services District (Area C): 2 km east of the city centre. Bus line 5 every 15 min. Car access via the Eastern Ring Road (avoids city centre). No cycling lane on the direct route. 25-minute walk from Area A.

Park and Leisure Area (Area D): Large park on the western edge, 4 km from Area B. Bus line 1 on weekends only. No direct cycling path from Area B — cyclists use the main road. Free car park at the park entrance.

Central Train Station (Area E): At the edge of Area A. All bus lines pass through here. Bike rental €2/hour. Taxi rank at the entrance. Paid car park €2/hour.

Co-funded by the European Union

Urban Mobility: Choosing the Best Route in a City

Transport Options Reference Table

Use this table in Steps 1 and 2 to compare the four transport modes available in Midvale.

Mode	Avg. Speed	Cost	Weather Affected?	Best Suited For
Walking	4–5 km/h	Free	Yes (rain/cold discourages walking)	Short trips (<1 km), city centre errands
Bicycle	12–15 km/h	Free (own) / €2/hr rental	Yes (rain/wind reduce comfort)	Medium trips (1–5 km) with cycle lanes; good weather
Bus	20–30 km/h (varies)	€1.50 /trip	Slightly (rain may delay stops)	Medium/long trips; all weather; budget travel
Car (private)	15–50 km/h (traffic)	Fuel + parking (€2–3/hr centre)	Minimally (ice/floods affect roads)	Carrying loads; out-of-hours; areas with no public transport

Travel Scenario Descriptions

Use these scenarios in Steps 1, 2 and 3. Groups may work on the same scenario or different ones. All three can be compared side-by-side in Step 2.

Co-funded by the European Union

Urban Mobility: Choosing the Best Route in a City

Scenario A — Morning Rush Hour Commute (Weekday)
It is Tuesday, 8:00 am. Maria lives in Area B and must reach her workplace in Area A by 9:00 am. Weather: dry and mild (18°C). The direct car route normally takes 10 minutes but currently has a 20-minute delay due to congestion. Bus line 3 is on time: 25 minutes including a 5-minute walk to the stop. The cycling path is clear: 18 minutes by bike. Walking the full distance takes 42 minutes. Maria has no heavy items to carry.
Key decision factors: time pressure, cost, physical effort, congestion. Discussion prompt: "Which option gets Maria to work on time with the least stress and cost?"

Scenario B — Weekend Leisure Outing
It is Saturday, 11:00 am. A family of four (two adults, two young children) in Area B wants to spend the afternoon at the park in Area D. No time pressure — they leave at noon, return by 6:00 pm. Weather: sunny and warm (26°C). Bus line 1 departs at 12:15 pm (20-minute journey). No cycling lane from Area B to Area D; the road is moderately busy. Free car parking at the park. Fuel cost approximately €1.50 each way. The family has a buggy and picnic equipment to carry.
Key decision factors: luggage, number of people, convenience, cost. Discussion prompt: "What is the most practical option for the whole family? Does the answer change if they have no car?"

Scenario C — Urgent Journey in Bad Weather
It is Wednesday, 2:30 pm. David is in Area A and needs to reach the hospital in Area C urgently for a 3:15 pm appointment. Heavy rain, 9°C. No traffic congestion. Bus line 5 departs at 2:35 pm (12-minute journey). Walking takes 25 minutes. Cycling is possible but wet and uncomfortable (approx. 10 minutes). By car via the Eastern Ring Road: 8 minutes; free parking for 30 minutes near the entrance. David has no car; a taxi would cost approximately €6–8.
Key decision factors: urgency, weather, cost, access to transport. Discussion prompt: "Which option gets David there in time? What if the bus is delayed?"