

Presenting person

MathCityMap

Module 2: Web Portal

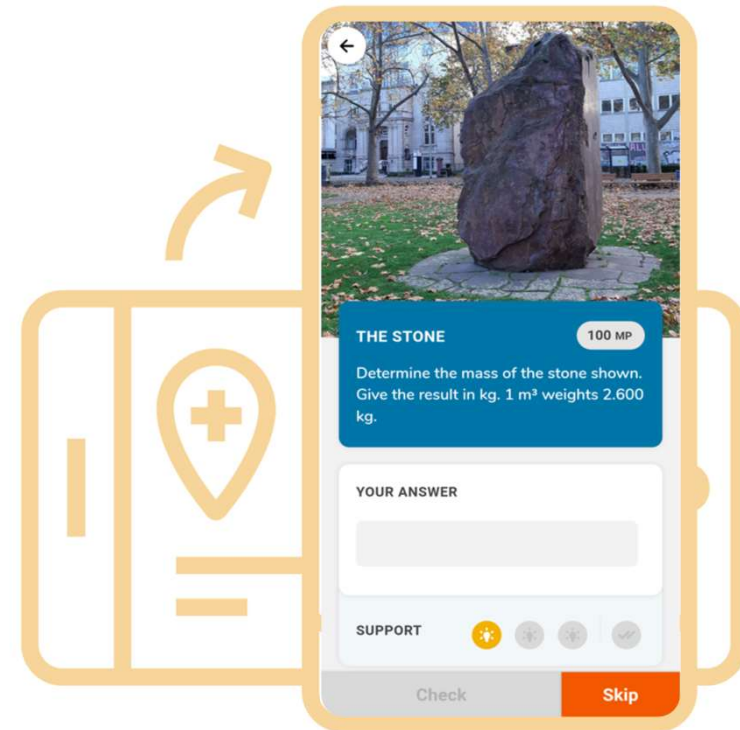
Deutschland
Land der Ideen



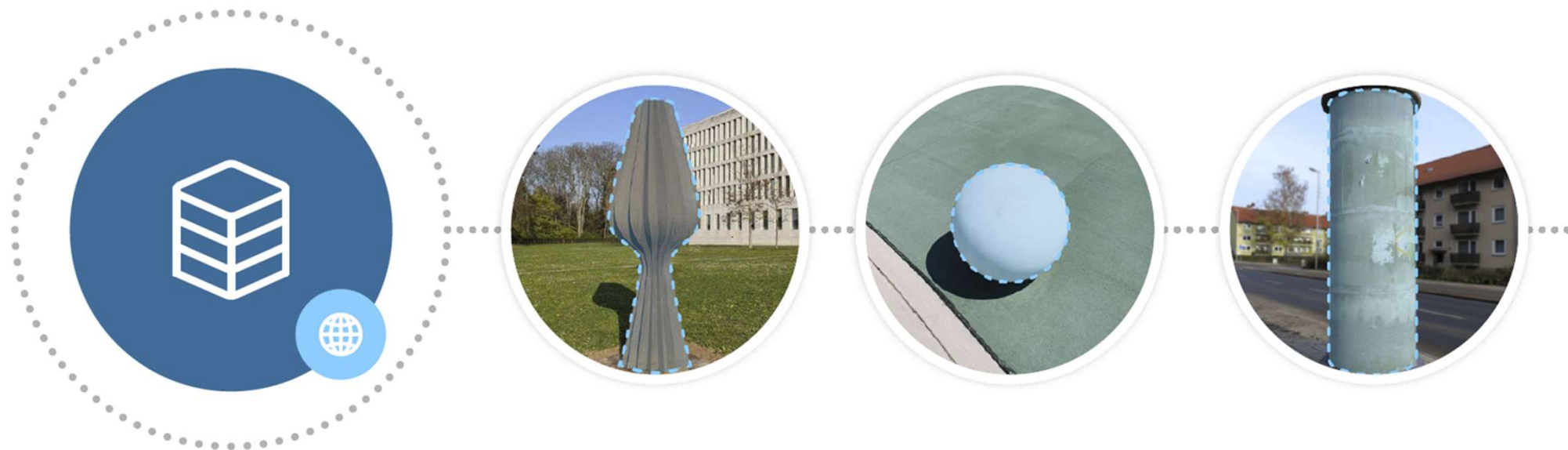
Ausgezeichneter Ort 2019



The MathCityMap System



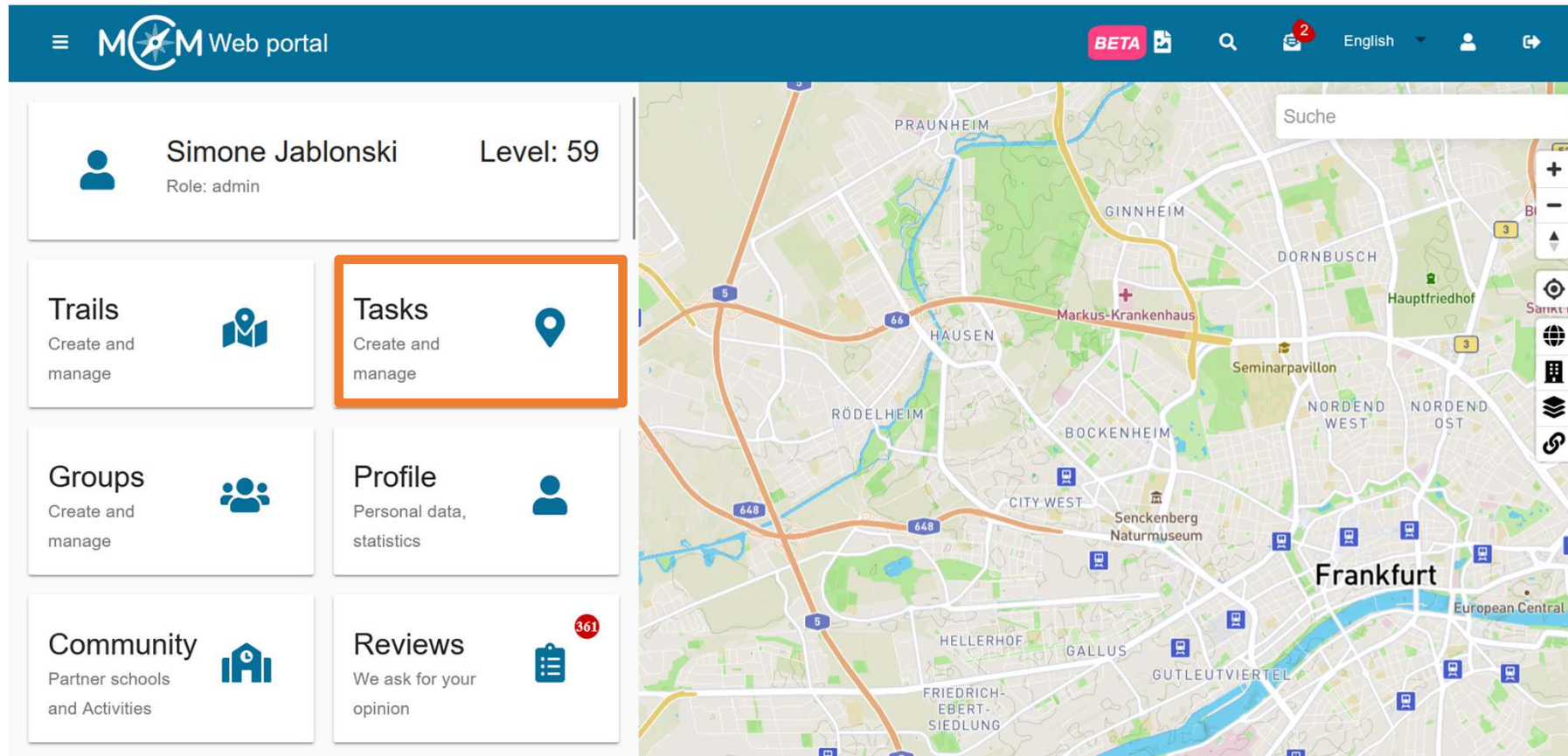
Web Portal



Web Portal

 The tasks are marked on a map

Web Portal: Home View



MCM Web portal BETA English

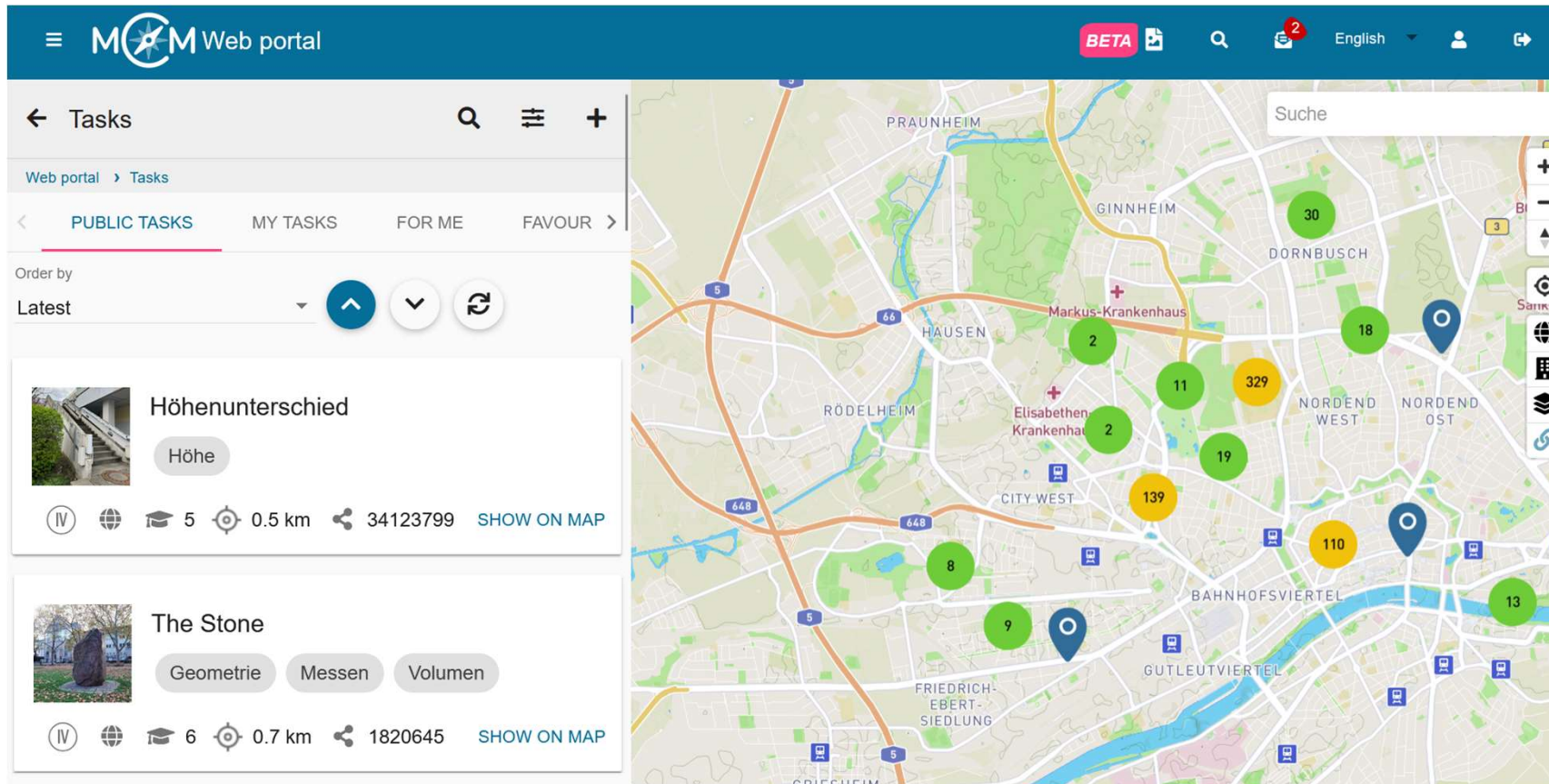
Simone Jablonski Level: 59
Role: admin

- Trails** Create and manage
- Tasks** Create and manage
- Groups** Create and manage
- Profile** Personal data, statistics
- Community** Partner schools and Activities
- Reviews** We ask for your opinion (361)

Suche

Frankfurt

Web Portal: Map View



Web portal BETA English

Tasks Suche

Web portal > Tasks

PUBLIC TASKS MY TASKS FOR ME FAVOUR

Order by: Latest

Höhenunterschied
 Höhe
 5 0.5 km 34123799 SHOW ON MAP

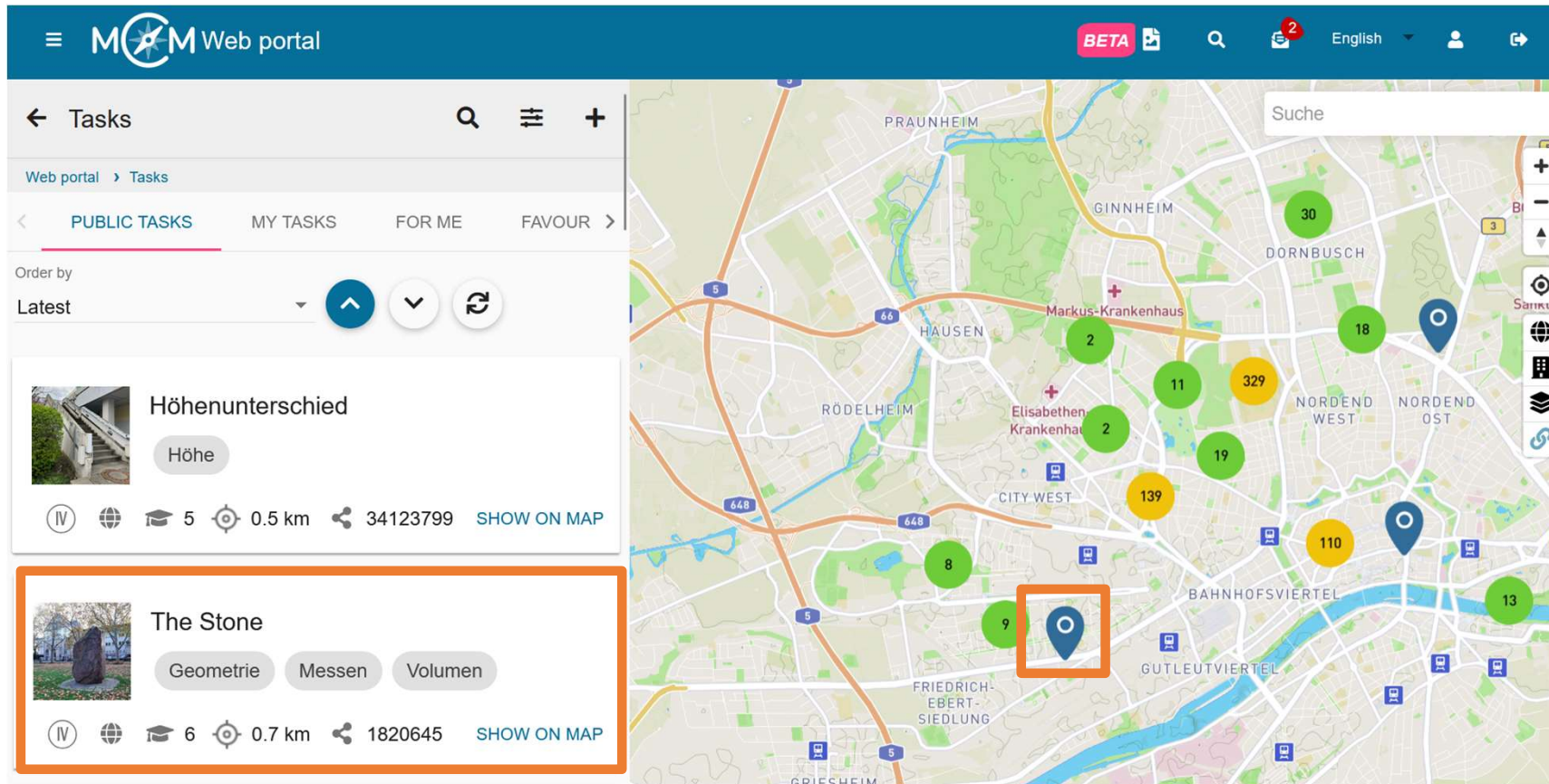
The Stone
 Geometrie Messen Volumen
 6 0.7 km 1820645 SHOW ON MAP

Map labels: PRAUNHEIM, GINNHEIM, DORNBUSCH, HAUSEN, RÖDELHEIM, CITY WEST, BAHNHOFSVIERTEL, GUTLEUTVIERTEL, FRIEDRICH-EBERT-SIEDLUNG, GRIESHEIM, Nordend West, Nordend Ost, Markus-Krankenhaus, Elisabethen-Krankenhaus.

Web Portal

- 📍 The tasks are marked on a map
- 📍 **Tasks can be accessed in the Web Portal**

Web Portal: Accessing Tasks




The screenshot displays the MCM Web portal interface. The top navigation bar includes the MCM logo, 'Web portal', a 'BETA' badge, a search icon, a notification icon with '2', 'English', a user profile icon, and a home icon. The main content area is divided into two sections:

- Tasks List (Left):**
 - Header: 'Tasks' with search, list, and add icons.
 - Breadcrumbs: 'Web portal > Tasks'.
 - Filter tabs: 'PUBLIC TASKS' (selected), 'MY TASKS', 'FOR ME', 'FAVOUR'.
 - Order by: 'Latest' with up, down, and refresh buttons.
 - Task 1: 'Höhenunterschied' (Height difference) with a photo of stairs, 'Höhe' tag, level IV, 5 tasks, 0.5 km radius, 34123799 views, and a 'SHOW ON MAP' link.
 - Task 2: 'The Stone' (highlighted with an orange border) with a photo of a stone, 'Geometrie', 'Messen', and 'Volumen' tags, level IV, 6 tasks, 0.7 km radius, 1820645 views, and a 'SHOW ON MAP' link.
- Map (Right):**
 - Search bar: 'Suche'.
 - Map area: Shows a city map with various task locations marked by colored circles (green and yellow) and blue location pins. One blue pin is highlighted with an orange square.
 - Map controls: Includes zoom in (+), zoom out (-), home, street view, and other map navigation tools.

Web Portal: Accessing Tasks

← Task: The Stone

Web portal > Tasks > Task 1820645 [Edit task](#)






The Stone

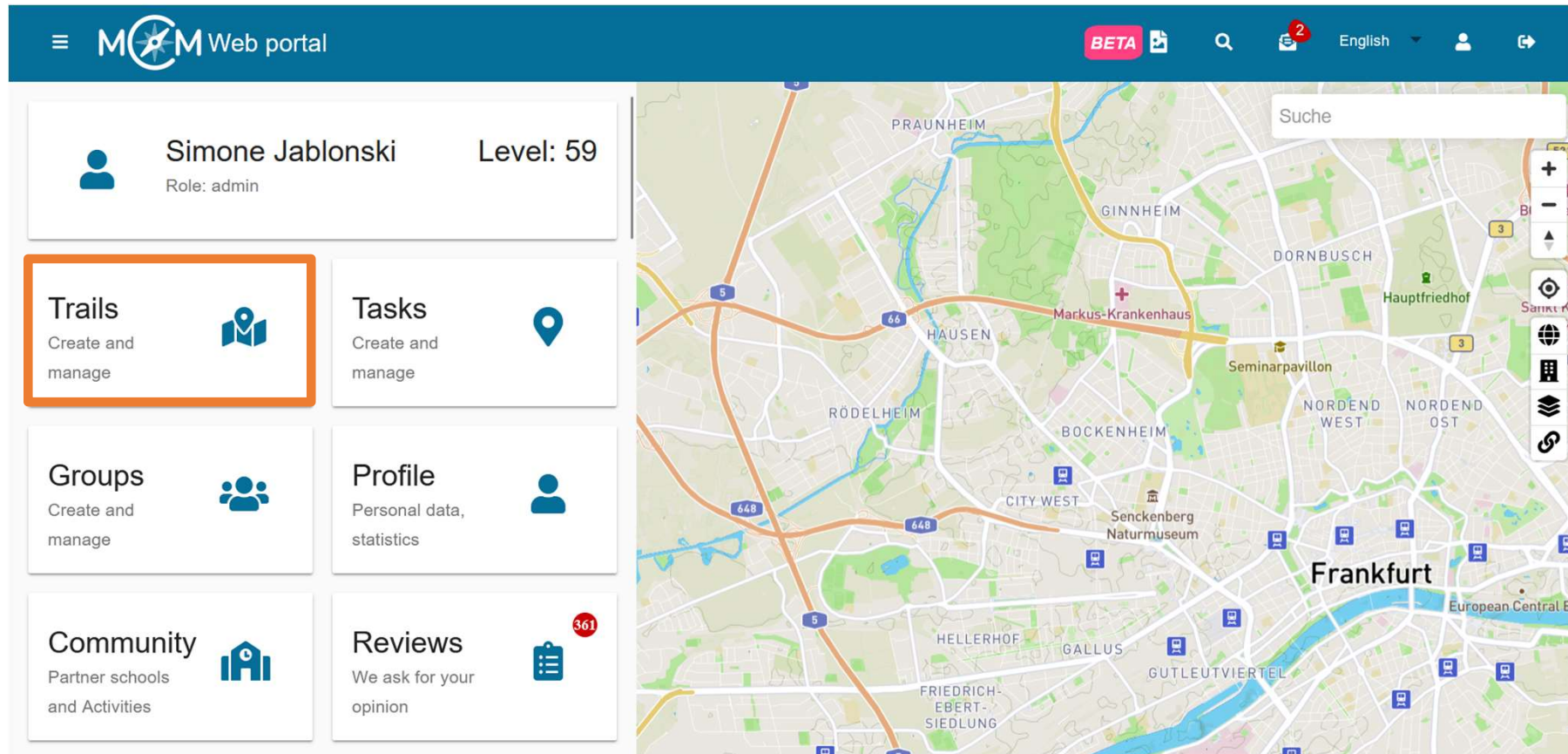
Determine the weight of the stone in tons, whereby it is known that 1m^3 weighs 2.600 kilograms.

Geometrie Messen Volumen

Web Portal

-  The tasks are marked on a map
-  Tasks can be accessed in the Web Portal
-  **Several tasks form a Math Trail**

Web Portal: Home View



MCM Web portal BETA English

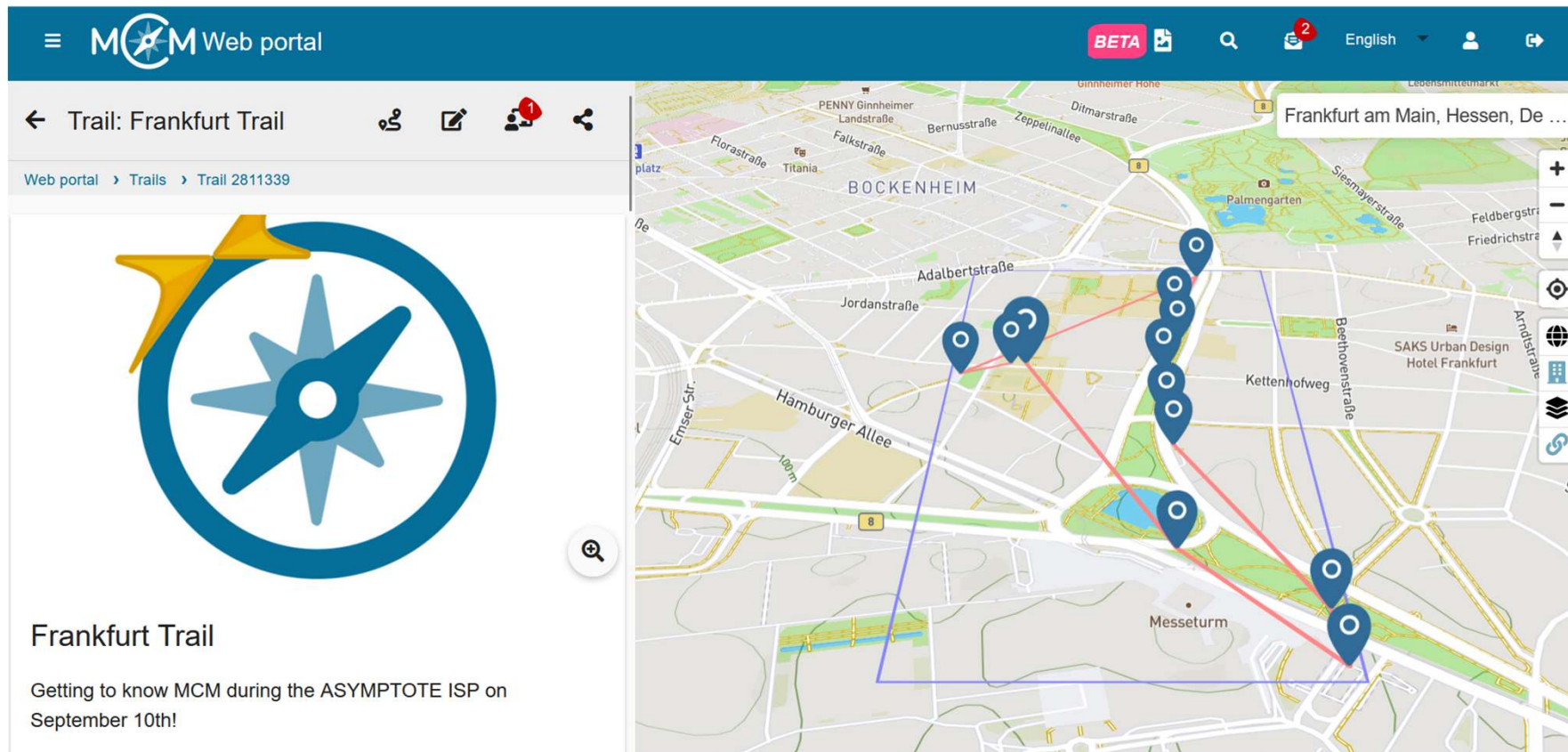
Suche

Simone Jablonski Level: 59
Role: admin

- Trails** Create and manage
- Tasks** Create and manage
- Groups** Create and manage
- Profile** Personal data, statistics
- Community** Partner schools and Activities
- Reviews** We ask for your opinion 361

Map labels: PRAUNHEIM, GINNHEIM, DORNBUSCH, HAUSEN, RÖDELHEIM, BOCKENHEIM, CITY WEST, SENCKENBERG NATURMUSEUM, HELLERHOF, GALLUS, GUTLEUTVIERTEL, FRIEDRICH-EBERT-SIEDLUNG, MARKUS-KRANKENHAUS, SEMINARPAVILLON, HAUPTFRIEDHOF, NORDEND WEST, NORDEND OST, Frankfurt, European Central B.

Web Portal: Accessing Math Trails



MCM Web portal

BETA

English

Trail: Frankfurt Trail

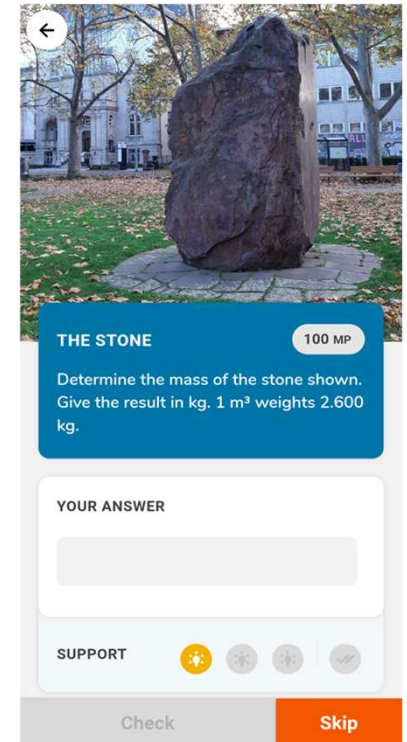
Web portal > Trails > Trail 2811339

Frankfurt Trail






Getting to know MCM during the ASYMPTOTE ISP on September 10th!

Web Portal

- 📍 The tasks are marked on a map
- 📍 Tasks can be called up in the Web Portal
- 📍 Several tasks form a Math Trail
- 📍 **The tasks are set in such a way that they can only be solved on site**



Web Portal

-  The tasks are marked on a map
-  Tasks can be accessed in the Web Portal
-  Several tasks form a Math Trail
-  The tasks are set in such a way that they can only be solved on site
-  **Everyone can take part and create their own tasks & Math Trails**



1

Do you have the permission to use ths foto (C); you should add it somewhere; also in the title page CC-BY

Eva Schmidthaler; 22.10.2025

Live Presentation: Create a task

<https://mathcitymap.eu/>

Criteria for a MCM–Task I

- **Uniqueness:**

For each task, a picture must be created that can be used to precisely identify the situation or the object that the task is about.

- **Presence:**

The task can only be solved on site, i.e. the task data must be collected on site. This also means that the image or the task text may not be sufficient to successfully complete the tasks.

- **Activity:**

The person solving the task must be active and do something (e.g. measure or count).

Criteria for a MCM–Task I

- **Multiple solutions:**
The task should be solvable in different ways.
- **Reality:**
The task should have an application reference, be realistic and not appear too contrived.
- **Graduated help:**
At least two hints should be added to each task.
- **Sample solution:**
A solution or solution instructions (only visible in the portal) should be provided for teachers.

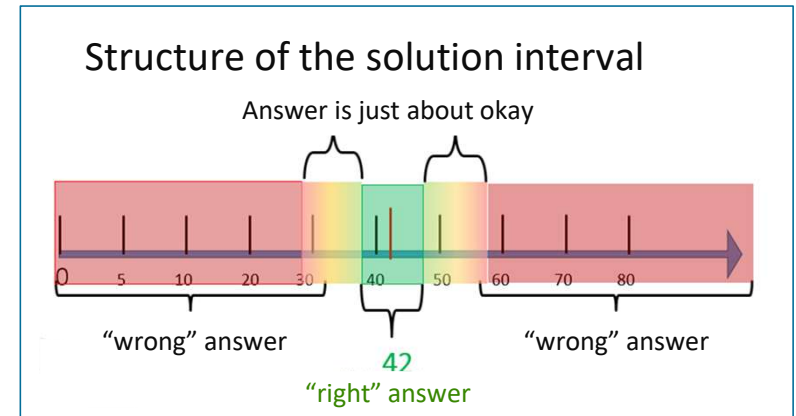
Answer Formats

- Interval
- Exact Value
- Multiple Choice
- Fill in the Blanks
- Vector (Exact Value)
- Vector (Interval)
- Set
- Fraction
- Information Station

Which answer format best suits my task idea?

Answer formats Interval

- Using scenarios:
 - All tasks for which a measurement is part of the processing.
- Example:
 - Determine the area of the (rectangular) area in m^2 .
Solution: $A = a \cdot b = 100m \cdot 50m = 5000 m^2$
 - BUT: Other measured values are conceivable (e.g. $a = 99.5 m$; $b = 49.8 m$)



Answer formats

Exact solution

- Using scenarios:
 - Combinatorial questions with an exact answer
 - Counting tasks in which the number can be determined very precisely
- Example:
 - How many windows are visible on the south side of the building?
Answer: 40



Answer formats

Multiple Choice

- Using scenarios:
 - Tasks that have several correct answers
 - Tasks that have terms as answers (equations, technical terms).
 - Tasks that present equivalent answers (e.g. $3 \cdot 2$, 6)
- Example:
 - Which direction is the sculpture facing?
 - a) North
 - b) East
 - c) South
 - d) West



Answer formats

Fill in the Blanks

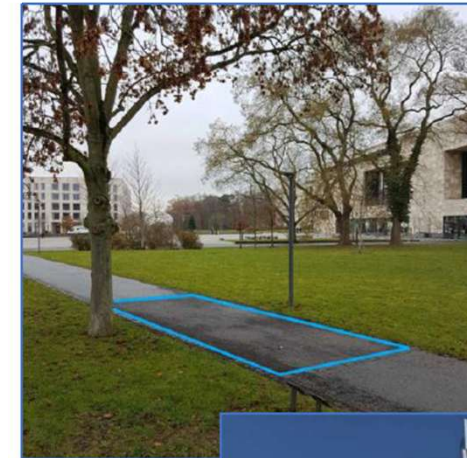
- Using scenarios:
 - Tasks that test technical terms
 - Tasks with a sentence as answer
- Example:
 - The graph of a linear function is always a **straight line**, which can be described by the **function equation/equation** $y=mx+b$. Here, m stands for the **slope**.



Answer formats

Vector (Exact Value & Interval)

- Using scenarios:
 - Breaking down the task into smaller steps, e.g., checking measured values
- Example:
 - Enter the measured length and width as well as the area.
 - Determine the minimum, maximum, and median of the data you find on the bicycle signpost.



Answer formats

Set

- Using scenarios:
 - Useful for tasks with solutions containing several numbers
- Example:
 - How many colors are needed to create a continuous pattern? More than one answer may be correct!



Answer formats

Fractions

- Using scenarios:
 - Determine percentages/proportions
- Example:
 - Proportion of grid squares in the small window relative to the large window



Answer formats

Information Station

- Using scenarios:
 - Information about important historical objects, etc.
 - Find objects, e.g., flat figure with three axes of symmetry
 - Send images to the teacher

Now it's your turn!

- Go outside and search for own task ideas!
- Use our worksheet and take notes for 2-3 tasks.
- Time until: xxx

MathCityMap Task creation

Part II – Back in the classroom

Learning Group: _____

Members: _____

Checklist for creating tasks in the web portal. Please fulfill the document in the same way as you enter the task information in the web portal.

Task title	
Task's location	
Check that you have taken a photo.	<input type="checkbox"/>
Task definition: (incl. specification of the required unit)	
Check that you have to be on site to solve the task. Make sure that the photo and task formulation are not enough to solve the task.	<input type="checkbox"/>
Selection of a suitable answer format:	
<input checked="" type="checkbox"/> Interval	Measurements or estimates
<input type="checkbox"/> Exact value	Counting tasks, simple arithmetic or combinatorial
<input type="checkbox"/> Multiple choice	Quiz questions with 2 to n answers
<input type="checkbox"/> Vector (exact value)	Tasks with multiple components for tasks with "exact value"

2

MathCityMap Task creation

Part I – Outside the classroom

Learning Group: _____

Members: _____

Task title	
Task's location	
Check that you have taken a photo.	<input type="checkbox"/>
Task definition: (incl. specification of the required unit)	
Check that you have to be on site to solve the task. Make sure that the photo and task formulation are not enough to solve the task.	<input type="checkbox"/>
Selection of a suitable answer format:	
<input checked="" type="checkbox"/> Interval	Measurements or estimates
<input type="checkbox"/> Exact value	Counting tasks, simple arithmetic or combinatorial
<input type="checkbox"/> Multiple choice	Quiz questions with 2 to n answers
<input type="checkbox"/> Vector (exact value)	Tasks with multiple components for tasks with "exact value"

1

Live Presentation: Create a trail

<https://mathcitymap.eu>