



MaSCE³

Math Trails in School, Curriculum & Educational Environments of Europe

Technology-based outdoor mathematics – Stage II

The Project

Math Trails in School, Curriculum and Educational Environments of Europe (MaSCE³) is a project aiming to disseminate the idea and usage of math trails in schools during regular lessons.

A mathematics trails (math trail) is a walk, where mathematical problems can be discovered and solved on real objects along the way. It is different from textbooks, because the data to solve the problem must be collected by the participant. This concept is now enriched by possibilities of the digitization, resulting in MathCity-Map as a two-component system that allows the preparation and organization of math trails by means of digital tools.

Nevertheless, experiences show that math trails are mostly used as a special learning form without further relevance for the regular mathematics lessons. During the MaSCE³ project, we want to close the gap between „normal mathematics lessons“ and math trails as a „special learning and teaching method“.

New functionalities for the learning environment will provide teachers with additional possibilities to organize Math Trails and support students individually. Moreover, the project provides material, methodology and trainings for teachers to easily create outdoor mathematics activities directly connected to their curriculum, thus encouraging them to use math trails more frequently in their classes.

The main developments within the project are...



Conception of a **Massive Open Online Course (MOOC)**, to educate a wide range of teachers from all over Europe to use MathCityMap and its new tools in their teaching on a qualitatively high level



A modularized **short-term curriculum for teacher trainings**, during which the teachers get familiar with the MathCityMap system and how to embed it in regular classes



Implementation of **Augmented Reality Elements, new task formats** and the **Digital Classroom** as a temporary learning environment which helps to organize and conduct a math trail



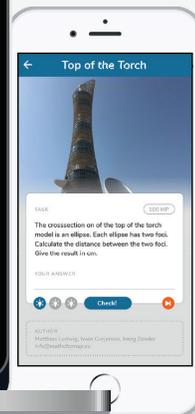
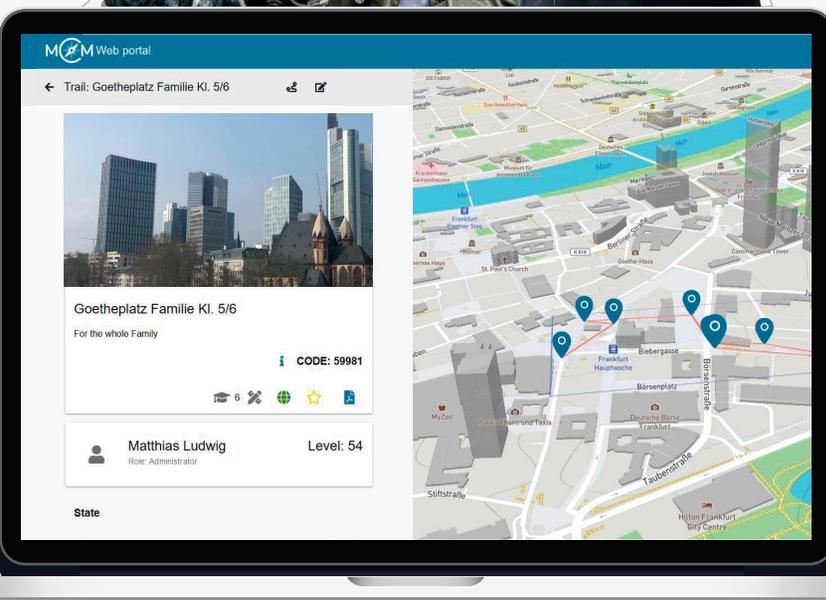
A **catalogue of theme-based trails**, which is a collection of tasks relating to a mathematical topic that can be found outside and easily be put together to the needs of the users

Results & Impact

At the end of the three-year lasting strategic partnership, we will provide European teachers with a holistic concept of how math trails can be used in regular math lessons. We will have results on three different levels. On the educational level we will develop the named short-term curriculum and provide the teachers with a MOOC. On the technical level, new functionalities like Augmented Reality Elements and new task formats will be added to the MathCityMap system. On the material-based level, theme-based trails will offer the teachers many possibilities to easily put trails together about a specific mathematical topic directly connected to their curriculum.



The MaSCE³ project supports teachers to use digital teaching methods in regular classes, resulting in more students to engage in outdoor learning gaining experiences in the real world.



Join & follow the
MathCityMap -Community



Photos: Philipp Tonn, ThisisEngineering

Consortium

The consortium contains eight partners from six different European countries

- Goethe University Frankfurt am Main** | GER | Project Coordinator
- Autentek GmbH** | GER | Digital Classroom
- Hochschule Offenburg** | GER | Augmented Elements
- Tallinn University** | EST | Task Formats
- Université Claude Bernard Lyon 1** | FRA | Theme-based trails: Geometry and Probability
- Instituto Politécnico de Viana do Castelo** | PRT | Theme-based trails: Algebra and Calculus
- Universita degli studi di Catania** | ITL | Massive Online Open Course
- The Spanish Federation of Mathematics Teacher's Societies** | SPA | Dissemination

Contact

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