



MDM in short

Project Title:

Model Discover Manipulate: a method for non formal learning of mathematics

programme: Erasmus+

key action: Cooperation for innovation and the exchange of good

practice action: Strategic Partnerships for school education

duration: from 1-12-2016 to 30-11-2018

leader: ASBL Entraide (BE)

partners: Associació Mmaca (ES), Fermat Science (FR), Il Giardino di Archimede (IT), Imaginary-Open Mathematics Mathematisches Forschungsinstitut Oberwolfach Gem Gmbh (DE), La Maison des Maths (BE)

Aim: EDUCATION - Addressing underachievement in the basic skills of maths, science and literacy through more effective, innovative teaching methods

MDM for Mathspaces is by definition an attempt to address underachievement in the basic skills of maths through a non-formal approach. The non-formal learning of mathematics is based on the following concepts: **manipulate**, **discover** and **modelize**. This should become a successful innovative teaching method of the often problematic topic amongst youth: the mathematics.

This approach has been successfully used by several institutions across Europe. Those institutions have a great success and according to the teachers who visited them a great impact. Despite this success the number of such institutions is still low and beyond the visitors not many people are aware of the non-formal learning approach. So the partners decided to gather to create a project that aims at raising the awareness and practice of the increase of the spaces dedicated to non-formal approach of mathematics in the European Union.

After understanding the benefits of the approach, the difficulty is to understand how it can be used. As there is no cursus, indications, etc., it is awfully difficult to know how to create and organize a space dedicated to it. To answer this question the project will support tools for MDM methodology and the creation of spaces for the non-formal learning of maths. This OER (open educational resource) will be practically and pedagogically presented to the target groups.

More precisely, in order to do that, partners will create:

- a Booklet on the efficiency of the non-formal approach of mathematics
- a practical Guidebook on the creation of spaces dedicated to the non-formal approach of mathematics.
- a Database of tools, games, activities and stations available in OpenSource
- two full sets of Expos (one for the 3-8 y.o. and one for the 9-15 y.o.) in OpenSource with blueprints and tutorials with clear instruction to build them (video and documents)

The Booklet will explain why it is useful to create dedicated spaces (permanent or not) while the practical Guidebook will explain how to create dedicated spaces from the genesis of the creation to its daily life passing by the creation steps and the necessary quality standards. Available in 5 languages, the documents will support raise the awareness about the approach and the creation of such spaces. The creation of the database and the 2 exhibitions have the purpose to ease the acquisition of the most important part of such spaces: its content. All the tools will provide detailed instructions and will have a video tutorial available online.

With this creation, we, therefore hope to have impact at several level: local, national, international, in order to increase awareness on the possibilities and benefits of the non-formal learning of mathematics and the quality level of the mathematical education possibilities, to increase the quantity of tools available for the institutions, to raise level of mathematical motivation, to increase competences and skills of workers in math educations.