My town in numbers

Project Kit description
The goal of the project is to increase pupils’ motivation and interest for Mathematics, to stimulate their investigative spirit and curiosity by combining common mathematical contents of the curriculum with aspects of day-to-day life in different parts of Europe, using concrete objects as well as representations of mathematical concepts. It is also intended to facilitate mutual understanding through getting knowledge on the historical and cultural contexts partners live in.
The project is not limited to one of the branches of Mathematics, but refers to this subject as a whole. The Mathematical support used can be diversified, from similarities and proportionality, other notions of geometry, magic squares, motion laws, measure units, volumes, even message encrypting.

Objectives
1. Establishing connections between mathematical contents in the curriculum and common aspects of day-to-day life, especially related to the places partners live in, by introducing our town in a non-traditional way to our partners.
2. Increasing pupils’ interest and motivation for the study of Mathematics and ICT and improving results in the class.
3. Knowing and understanding our partners’ cultural and historical background. Getting aware of the similarities and differences between us, enhancing tolerance and cooperation.
4. Facilitating communication in a foreign language. Using English as a platform to access knowledge, as well as a collaboration tool to communicate information, ideas, and feelings.
5. Using ICT as a strategy for searching for information, solving tasks, sharing and disseminating results and as a communication tool for both teachers and pupils.
6. Diversifying teaching techniques, bringing to life the ideas of constructivist instruction.
7. Enhancing pupils’ creativity by presenting and documenting mathematical rules and calculations in innovative ways

Process
Starting Activities
Teachers will first compare their respective syllabuses and decide on the common content to be used. The ice-breaking activities will include presentations of pupils, teams, their schools’ and towns, including historical aspects of partners’ towns, aiming to help the pupils get acquainted to the Twinspace tools.

Part 1
The next activity will be the logo contest. Pupils can create the logo proposals, either drawn by them, or using specialized sites or software.
Then, the main project activities will begin, consisting of proposing Mathematical tasks for the partners. As the partner teams give the solution, the proposing team would correct the responses, and then the task will be discussed and compared both among teachers and in class.
Some examples of tasks:
• Magic Squares: creating magic squares with numbers connected to partners’ towns
• The Fountain: measuring the fountain in the town square and calculating its volume
• The PE Room: using similar triangles to calculate the height of a tall building in town
• Encrypted Messages: decrypting messages connected to our town by using as a key the solution of a Math problem.
• The Schoolyard: finding the largest rectangular area with a given perimeter or the smallest possible perimeter of a rectangle with a given surface.

Subjects
Level
10-14
Note
The mathematical problems and the solutions can be presented in a charming way and with personal involvement in order to create a feeling of authenticity.
Powerpoint presentations but also other ICT based solutions (web-tools for creating puzzles and word-clouds etc.) can be used and experimented with to inspire pupils and develop their problem solving skills.

Evaluation
The evaluation can take place on an ongoing basis throughout the project, in each of the partner schools, both at pupil and teacher level. Project phases will be analysed and possible difficulties discussed.

The pupils may be assessed by the teacher in relation to:
• active participation and communication
• using ICT with partners in other schools,
• the level of commitment and motivation,
• the level of cooperation,
• specific objectives of the subjects involved.

Towards the end of the project a final evaluation phase could include questionnaires, discussions and a videoconference- optionally. The evaluation tools for pupils can be chosen according to their age: polls, web 2.0 tools such as Wallwisher, Voicethread, Glogster etc.

Follow-up
Expected Results
• Improved class results (reflected in grades) for the participant pupils
• Improved use of ICT skills and English communication for both pupils and teachers.
• Improved social skills and teamwork for all the participants.
• A better ability to perceive learning as a complex of activities in various fields, improvement of cross-curricular teaching strategies
• A perception based on tolerance, diversity and intercultural dialogue
• Expanding cultural horizon of pupils and school teachers

The materials, especially the blog and the website, can be used in the following years as extra resource material for teaching certain topics. The project can be expanded to other cultural topics, using Maths as a vehicle for learning, communication and mutual understanding