Project can be named "What about your micro:climate?" Or "micro:climate <mark>TWIST</mark>-Team Work In Science Technology"

 -a first introductory survey for students to understand what our students know about weather characteristics, about basic concepts/measures (temperature, light, pressure), if they concern about the weather, what is the difference in weather, climate, micro-climate, etc
and also some questions about robotics/sensors

Last year my students got lessons about Urban Flooding and air pollution. In an attempt to unite these two themes, we make a weather station with the needed sensors. We also have micro:bit, so we could run parallel with you. I don't have breakout connectors or something yet. Just 10 basic kits.

-we start using the micro:bit/arduino the trivial way (to start getting familiar with the basic orders and the way of using it),
e.g. that students have a first approach (to create their name on board, sending a message etc while presenting themselves)

looks good, exchanging the HEX-files to virtual meet the other students

maybe we could arrange online meetings for the students to collab on certain parts?

-Then students have guided web search and they make presentations (slides, drawings, videos explaining ...we will arrange the tools that we will use) about weather features

I would break down the weatherstation into differnt parts, one for each group? My students always need to write down their progress and reflection. They could make a videotut with the explanation of their part or write an instructable.

3D printing
I was thinking in drawing the weatherstation in 3D, using Thinkercad or Fusion…

-Mean while i hope that we will have got the weather sensor for microbit (building the weather station in arduino, too)

-We measure 2 days a week (because i will work in two different schools and at Petroupoli i will be 2 days/week) maybe we could try to make it IoT? with arduino, it is possible. I don't know with micro:bit.

- we create a google sheet and we follow school's measurements there
- we compare with average temperatures on official statistics of the previous years (weather sites online) and with partners findings
- Students in forum discuss the findings and they present in LIVE event (we need to have multiple LIVE events so that students getting knowing each other but also for real time collaboration like playing a game/quiz together online and checking the score...)

so we have in this project
technology (microbit)
science (weather features)
math (spreadsheets, statistics, etc)

**Also
we can have a section on the project about climate change creating posters, maybe comics etc….but we will see about that

***To register the project in eTwinning we could have an "outline" of the project with general description, aims and working process and we can edit anytime when the project is ongoing. In a project, the only thing that we can not change is the title

AIMS
The main aims of the project are:
- to encourage students (especially girls) with STEM
- to solve problems from STEM sciences in a fun way
- to create the idea among the students that everyone can do programming
- to learn basic programming skills of structured programming(active learning)
- to apply basic principles of engineering, physics and maths.
- to communicate in English and improve language skills.
- to improve collaboration skills

WORK PROCESS
Initially, we will be in contact with the partners to understand each other's background, to agree the age of the students and to know the apparatus/equipment that each school has.
Our schedule to start with:
August 2019: finding more partners.
September 2019: deciding the schedule and the ares we will work. Select the students and introduce to each other.
October 2019: presentation of the school and students. First contact with what STEM is. Presentation from each school.

Every month we will finish a task. The contact with the partners will be weekly or every 2 week in order to evaluate the processes, redesign the task in case of difficulties. Students will work into teams not only in the same school but also transnational.
November 2019: Communication and collaboration
December 2019 - April 2020: Working into teams

May 2020: Evaluation and Follow up of the project

EXPECTED RESULTS
- Designing a public Twinspace
- Creating teaching scenarios for using microbits
- Creating a final presentation with our products/ videos etc so it can be used by other teachers who would like to work in the area of STEM.

To improve the coding skills of students with no project and to develop students by doing robotic designs as a result of coding training.

It is an important necessity of our time to educate our students who follow the technology closely by learning to encode and to meet them with computer programming, not to use only informatics applications, but to adopt a disciplinary approach to produce new applications and to be able to use 21st century skills.

In our project, with the interdisciplinary approach and the skills of the 21st century, we will realize the theme-emphasized coding-design, technology integrated course and STEM (Science, Technology, Engineering, Mathematics) applications.

AIMS

Encourage students to design original designs by working in collaboration with the design technological field.

Linkage between curricula,

Contribution to the academic and social achievements of students,

To gain basic skills in programming,

The fact that students are entrepreneurial, technology-producing individuals,

Integration of project based learning model into education life,

Being able to follow up studies done with different schools and providing personal development with constructive feedbacks,

Creating creative solutions by using technology to daily life problems,

STEM practice in our courses,

Introducing students to the "Do It Yourself" philosophy,

Integrating new trends of technology like coding, design, robotics into learning

WORK PROCESS

18/09/2017-10/10/2017 Enrollment of students

15/10/2017-30/10/2017 Meeting of students conference construction

01/11/2017-01/02/2018 Training activities for the students

15/02/2018-01/05/2018 Creation of student teams. Team work

15/05/2018-30/06/2018 Teams sharing products and terminating the project

EXPECTED RESULTS

Through an interdisciplinary approach, students develop products, ideas and projects with new trends of technology such as coding, design, robotics.

Students have the skills and competencies required by the 21st century.

Students become aware of STEM Education.

Students are provided with the ability to reach higher levels of innovation and innovation.

vThis project is to create a weather station and all the tools to compile data, share the results to understand the different climates in Europe, and finally to make a video about weather news.

AIMS

- To understand the difference between weather and climate.

- To recognize and understand vocabulary about weather.

- To identify key words related to weather in a variety of texts.

- To build measuring instruments: thermometer, rain gauge, barometer, weather vane and anemometer.

- To understand the concepts of precipitation, temperature, atmospheric pressure and wind.

- To use phrases to talk about weather phenomena.

- To illustrate phrases about the weather in your region.

- To use different instruments to measure meteorological phenomena.

- To use tables to record meteorological data.

- To describe the weather through photography, drawings, etc.

- To exchange weather maps in order to better understand European climates.

- To acquire group dynamics that facilitate cooperation among students by using the foreign language in the classroom.

- To become confident in the use of a foreign language.

- To ask and give personal information about ones.

WORK PROCESS

To use the topic of weather to let students get to know each other.

To get to know each other via TwinSpace, emails, the exchange of written mediums, projects, and weather-related pictures.

Regards methodology, we are going to focus on Flipped Classroom, Project Based Learning (PBL) and Cooperative Work.

We will work on this project from September to June, making differents activities; individual ones, others in national groups and others in international groups.

EXPECTED RESULTS

Students are expected to create a variety of weather measuring instruments and to collect and represent data about the weather in their region. Moreover, they are required to prepare a weather forecast about European countries.

In addition to that, and regarding theoretical scientific knowledge, students should be able to differentiate between the central concepts of this project, which are weather, climate, precipitation, temperature, atmospheric pressure and wind, among others. Finally, they should be aware of the diverse climates that exist in European countries.

How is the weather in my school, at your school and in our school is a Project where students will learn how to build a weather station, learn the Physics behind it, and share data between schools. One school will be responsable for gathering all the data, build a database so that each school can show on school website the weather in real time in every school participating.

AIMS

Learn about the weather in different places.

Design in 3D a box for weather station

Use English in real communication situations.

Program sensors, design circuits and soldering components

Increase ICT skills

Improve teaching methods to strengthen students' learning skills

Promote cooperative work in international teams and improve team skills

Develop competences for future action

Promote critical thinking and intercultural dialogue to reach well-founded conclusions and solutions

...

WORK PROCESS

October:

students will introduce to each other, decide the comunication process, present school by exchanging a film, a logo, form teams, define which components will be part of the weather station.

Starting to build the weather station: gathering material, design the weather station, eletronics desings,

End of october-1st online web conference where students present what the weather staion will measure, which data will gather.

November-building the weather station

Exchange reports/messages of how the process is going

December:

2nd online web conference

Say hello, exchange chrismas greentings, and how the project is going

January

First tests for sensors and comunications

February.

3rd online web conference

March and April:

Exchange data

Shared at all schools webpages

4th online web conference - conclusion of the project and preparing the ERASMUS project

EXPECTED RESULTS

The final product will be the data gathered by each school, being share in real-time in each school website that participate.

Write an article for the Science in school Journal about the experience.

And a public TwinSpace.

https://issuu.com/mfffalmeida/docs/caixa_do_tempo_alterado
https://issuu.com/mfffalmeida/docs/caixa_do_tempo_alterado
https://mfffalmeida1.wixsite.com/website