eTwinning

Slovakia-Bulgaria 2025 e-book

What is eTwinning?

- eTwinning is the largest comunity of schools in Europe
- it was founded in 2005
- eTwinning helps conect stundents and teachers from all types of schools all around Europe
- It helps students learn how to comunicate and work remotely online

Projects and initiatives of our eTwinning

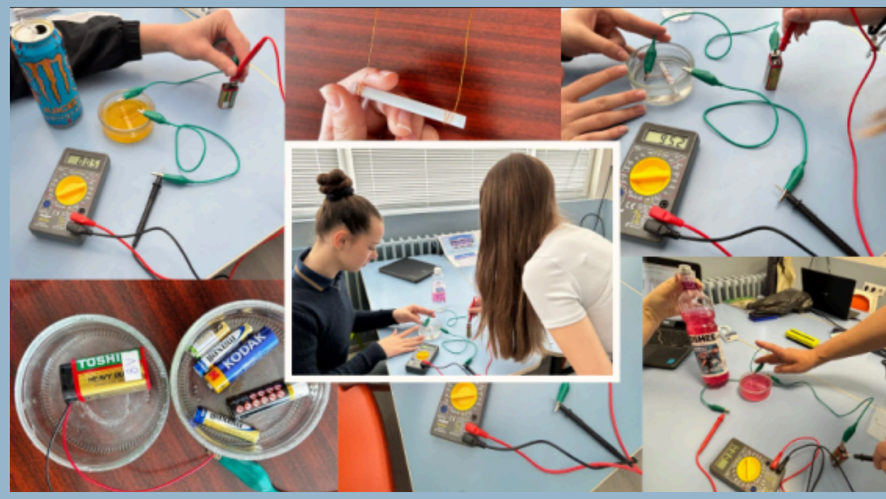
Throughout the past few weeks we split into groups and each group conducted some experiments about the following topics: exploring friction on different surfaces, electrolyte challenge, fluid mechanics, green energy in our lives, optic and light, discusion about physics of local sport, infinity mirror.

Exploring friction on different surfaces

- In this project our classmates tested the level of friction on different surfaces
- They tested the friction by dragging a tricycle on different. Theese surfaces include gravel, grass, cobblestone, dirt, concrete, a rubber running track and artificial grass

Electrolytes chalenge

- The goal of this project was to find out which drink contains more electrolytes
- The drinks used in this project were orange juice and an energy drink
- A multimeter was used to measure how many amps were flowing through the liquid. It used the principle of conductance to measure the electrolyte concentration.
- Orange juice had about 11mA flowing through it an energy drink had around 31 mA.



Fluid mechanics - verifying pascals law

- Experiment Summary: Using two water-filled syringes connected by a plastic tube, the team demonstrated Pascal's Law—that pressure applied to a confined fluid is transmitted equally in all directions.
- Materials: 2 Syringes, 1 Plastic Tube, Water
- Conclusion: The second syringe's response confirms that pressure travels uniformly through the liquid, illustrating Pascal's Law in action.

Green energy in our lives

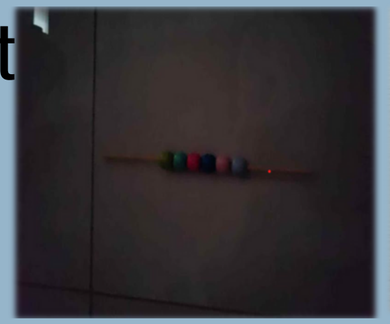
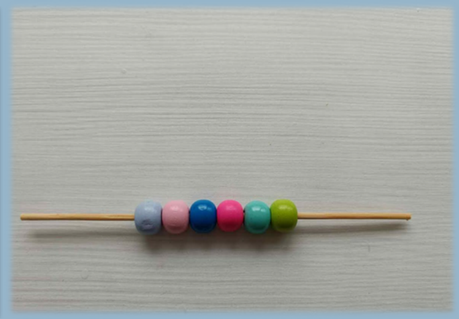
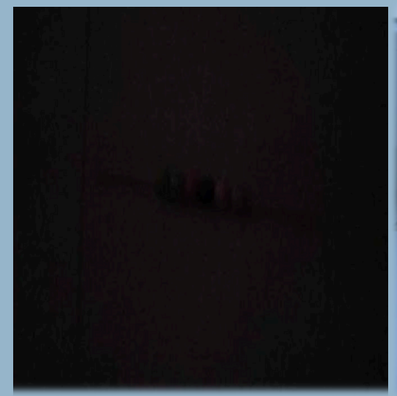
- Green energy is a very popular topic theese days, so we included a project about green energy
- The presentation explained what green energy is and its importance, it explained the different types of green energy, how to use green energy and what we can do to help conserve electricity

Optic and light, colors in different light conditions

- **Objective:** This project explored how light conditions affect the perception of colors, using physics and real-world observation.
- **Observed Conditions:**

-Sunny Day
-Late Evening
-In the Dark
-Complete Darkness
-Cloudy Day

- **Key Concept**: Light is essential for color perception. Different lighting conditions change the way we see and interpret color, demonstrating core principles of optics and human vision.


Discussion about physics of local sport

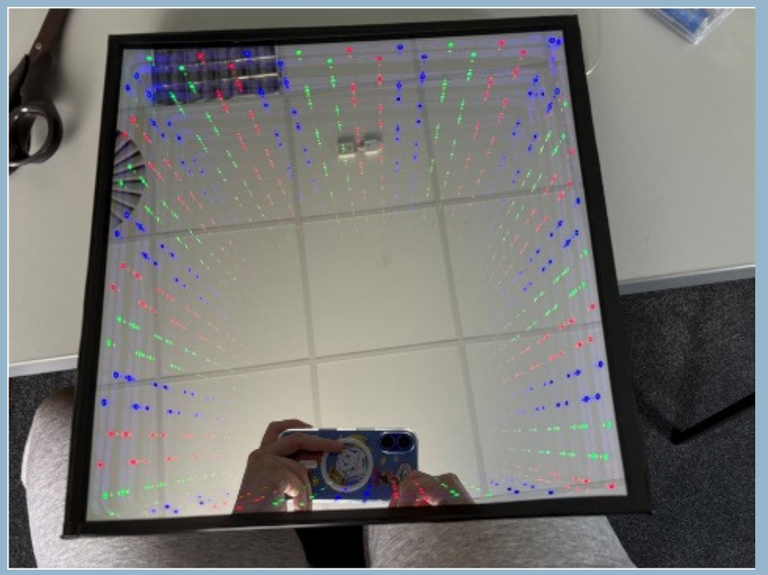
The Physics Behind Kicking a Football
Kicking a football involves physics like force, angle, and momentum. The kick's angle affects distance and accuracy. More momentum (faster foot) means a faster ball. Weather (wind, rain, altitude) can change the ball's flight. Even the shape of the ball matters—like the 2010 World Cup ball, which flew unpredictably due to its perfect roundness.

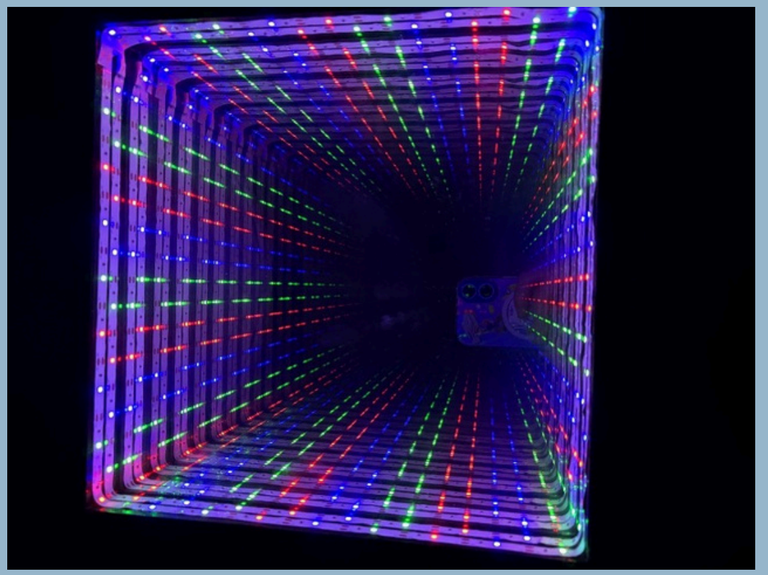
Build an infinity mirror

Project Goal: To create the illusion of infinite space using mirrors.

Scientific Principle:

- Two opposing mirrors cause light to reflect back and forth infinitely.
- A two-way mirror reflects on one side and is transparent on the other.
- Placing a regular mirror at the bottom and a two-way mirror on top traps light and reflections inside, creating the illusion of depth.
- LED lights enhance the visibility of the effect.





Thank You for Reading!

This eBook was created as part of our eTwinning collaboration, where students across Europe explored learning through creativity, science, and teamwork.

We hope this journey inspired curiosity, international friendship, and a deeper understanding of how learning connects us all.

eTwinning – Learning Together, Growing Together.
See you in the next project!