# STEAM in Education

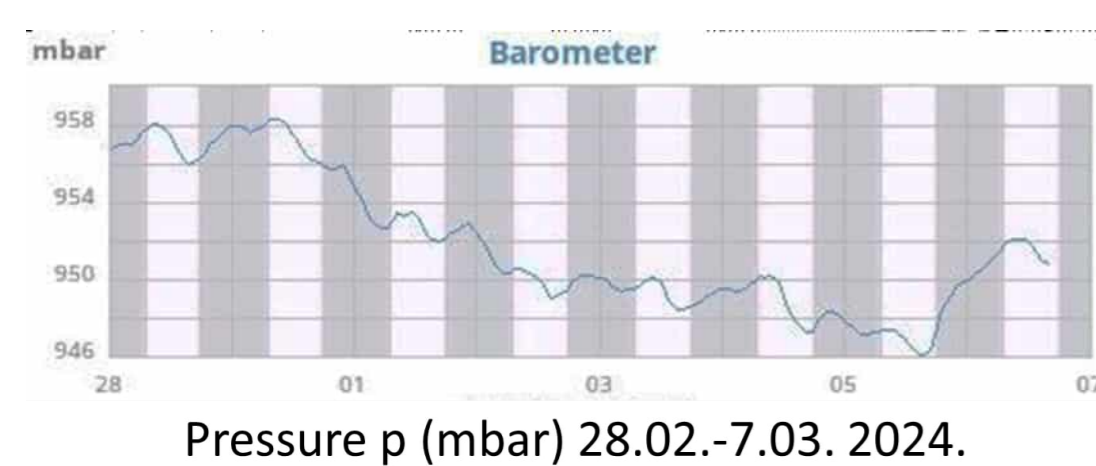**dr. P. Mária and Cs. Csanád | SZÉKELY MIKÓ HIGH SCHOOL | Sf. Gheorghe | Romania**

Mini meteorological station for our school - STEM project at SZÉKELY MIKÓ HIGH SCHOOL

The aim of the project is to perform special activities that improve the students' technical, theoretical and IT competencies (Arduino based applications - mini meteorological station, minisatellite, weather station network for schools, etc.).

This transcurricular activity is based on STEM topics, Arduino applications and IT that are not taught at Romanian school curricula.
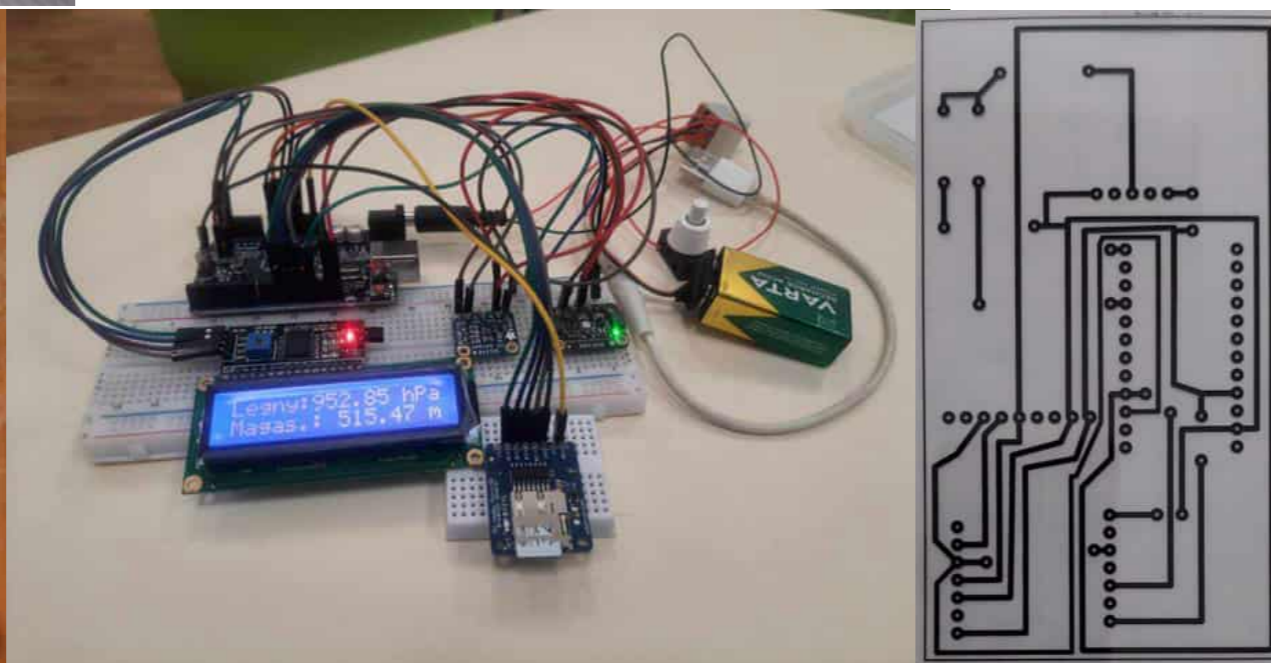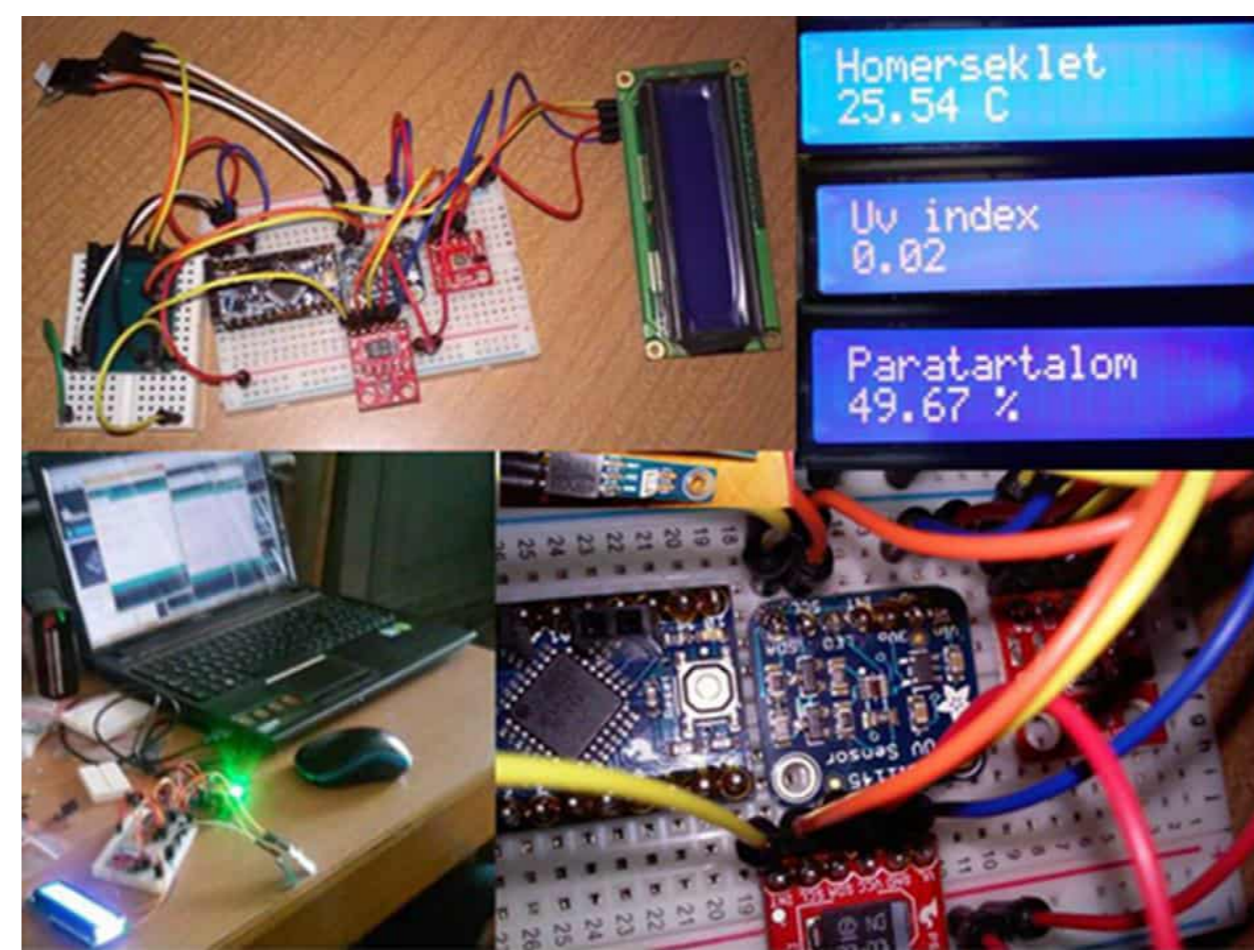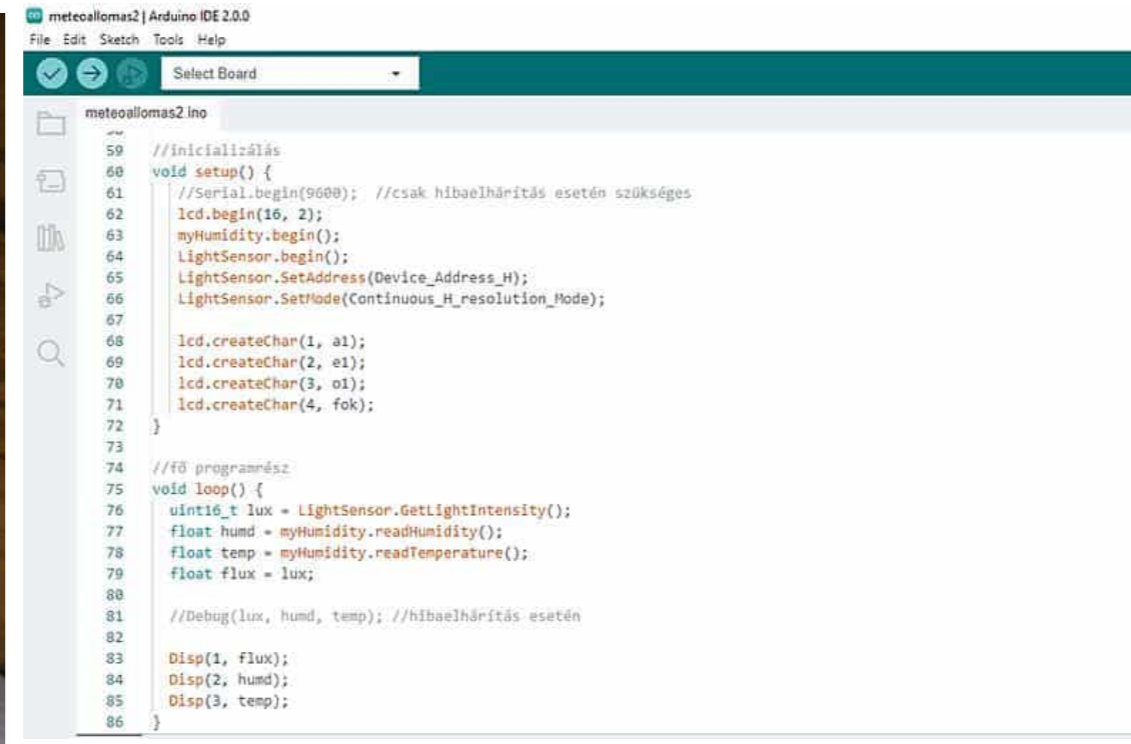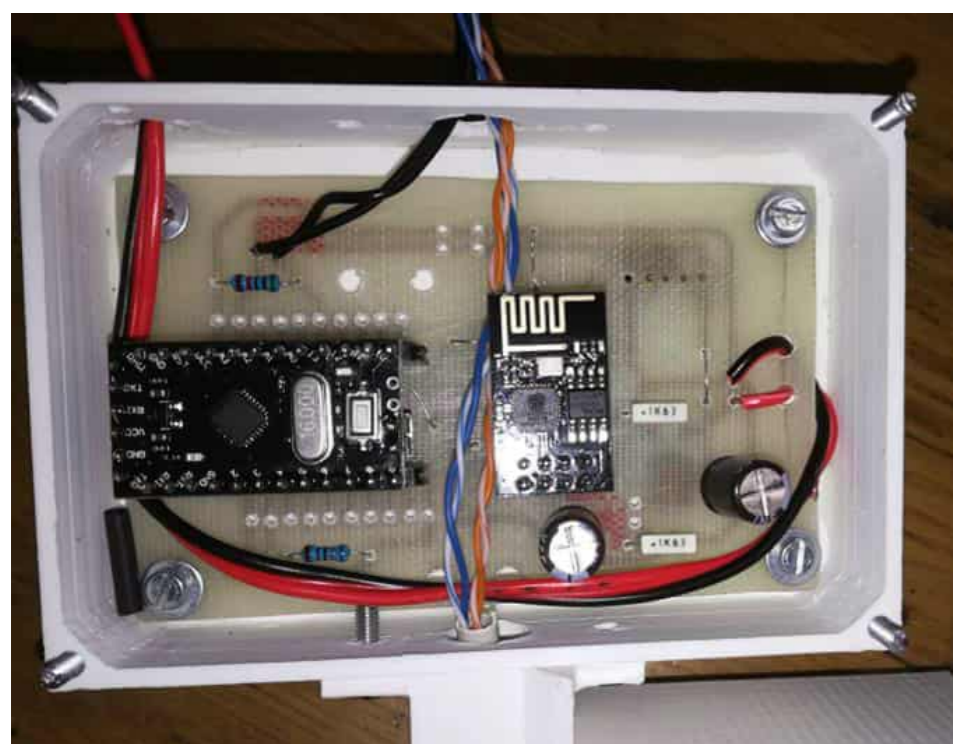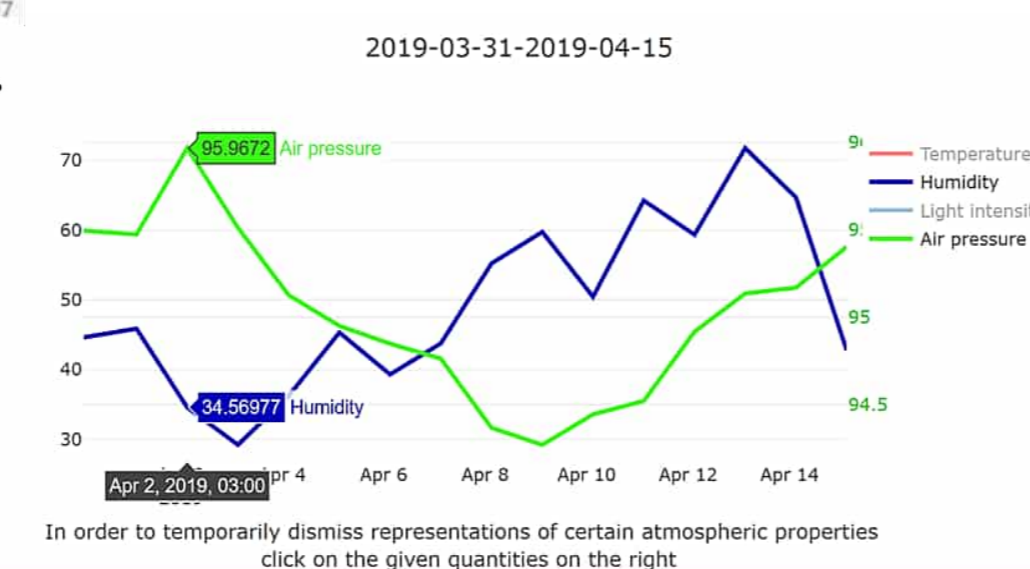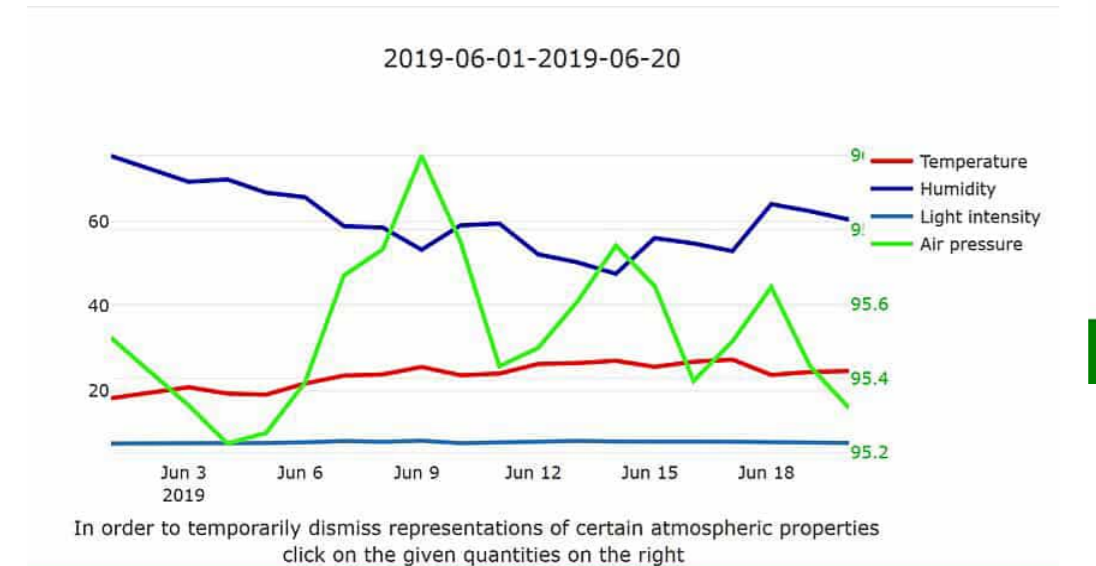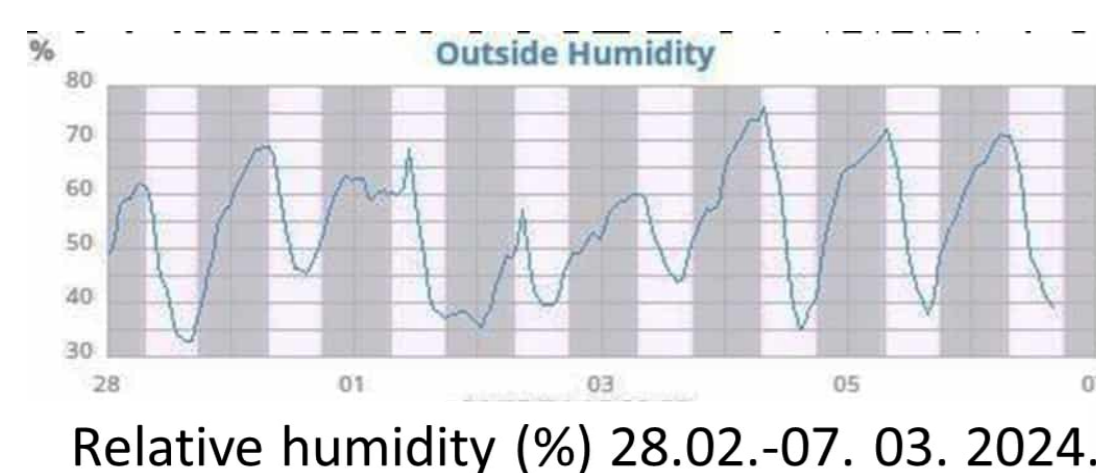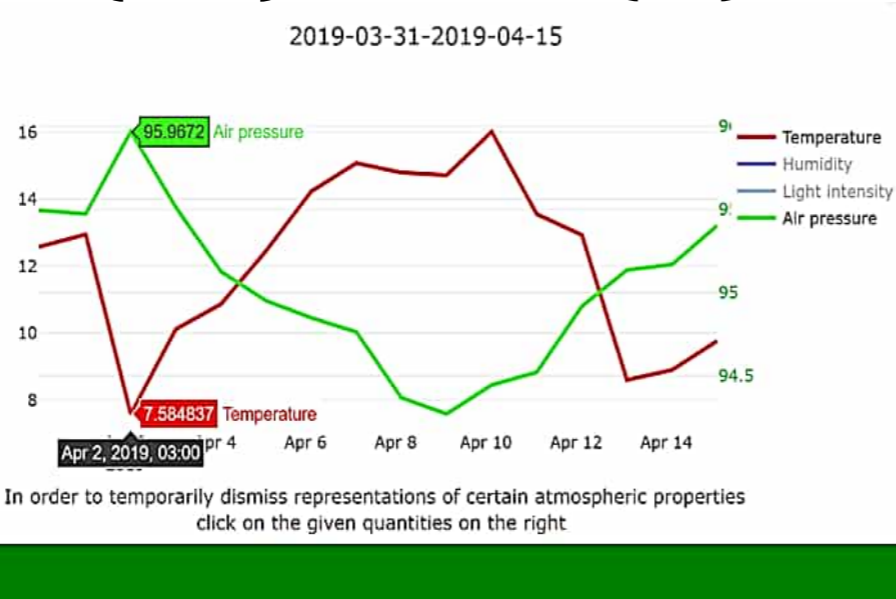

Collected data: pressure, relative humidity, temperature, UV index, light intensity, gas components and pollution;

Arduino based applications - PBL and IBL methods; Hands-on activities with secondary school students

Based on the creativity and prior knowledge of the students the challenge is, to create a unique but simple measuring tool and develop the proper control software for it. The main task is: building an device, able to carry out a pre-programmed mission without any intervention (collect data, measure atmospherically parameters, data analysis, etc.).

Graph drawing and analysis during the Thermodynamics, Biology or Geography classes.

Pressure p (mbar) 28.02.-7.03. 2024.

Relative humidity (%) 28.02.-07. 03. 2024.

Pressure (kPa)   Temperature (⁰C)

2019-03-31-2019-04-15

In order to temporarily dismiss representations of certain atmospheric properties click on the given quantities on the right

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https://metemiko.az-elveszett-cirkalo.net/weewx/
Our school meteo-webpage

This creative process, performed with students, helps them deepen their understanding of the internal connection between the theory taught at physics and IT classes and those practical, technical applications. What we learned:
Project management – how to carry out a scientific project from planning through design to the final product; Problem-solving skills; mini meteostation planning and building;
More physics: mechanics, atmospheric physics, electronics, electricity; Computer science, IT; programming (Arduino software, C++, Python).