DIVERSITY IN STEM EDUCATION

projects including the variability of teaching methods, for talented students, for inclusive learning, cooperation between younger and older students etc.

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"How it works?". Development of science and technology competencies.

Pupils scientific and technological competences are developed using Lego, Robotics, Electronics and other kits.

Using various resources, pupils research the problems raised, plan the steps to solve the problem.

If necessary, look for alternative solutions, using existing materials design, model, construct and program the necessary mechanisms using which to solve the set tasks.

Throughout the work there is cooperation between the school children. Pupils share experiences and skills among themselves.
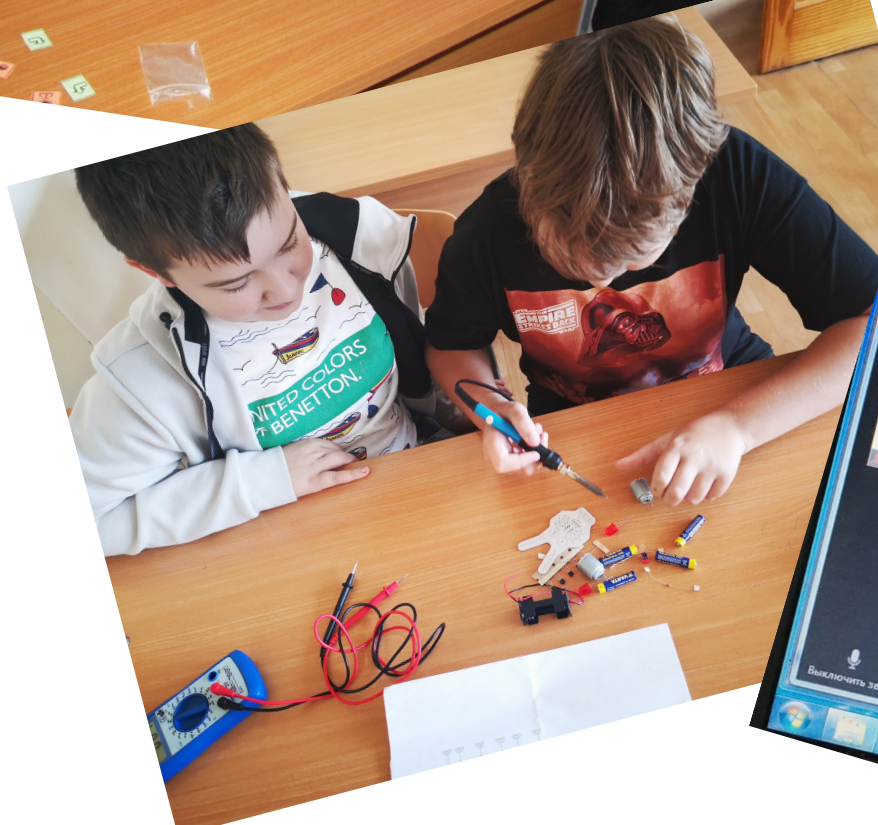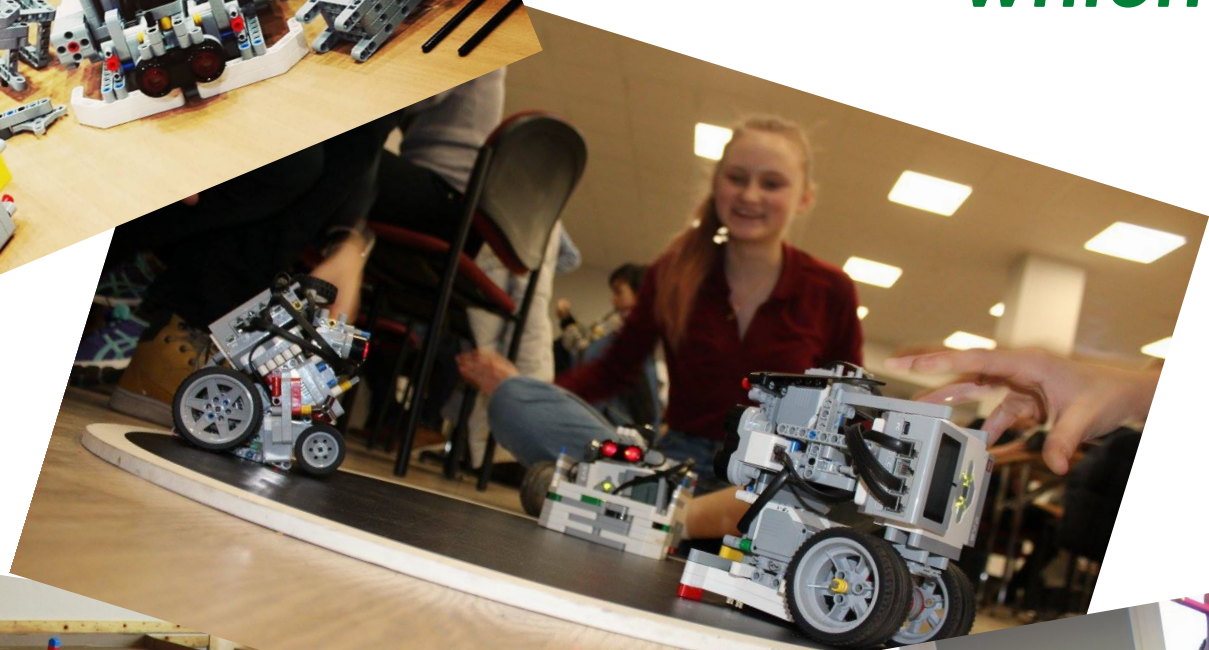
Pupils not only learn the basics of robotics, electronics, programming, design and modeling, but also put the acquired knowledge into practice and train others.
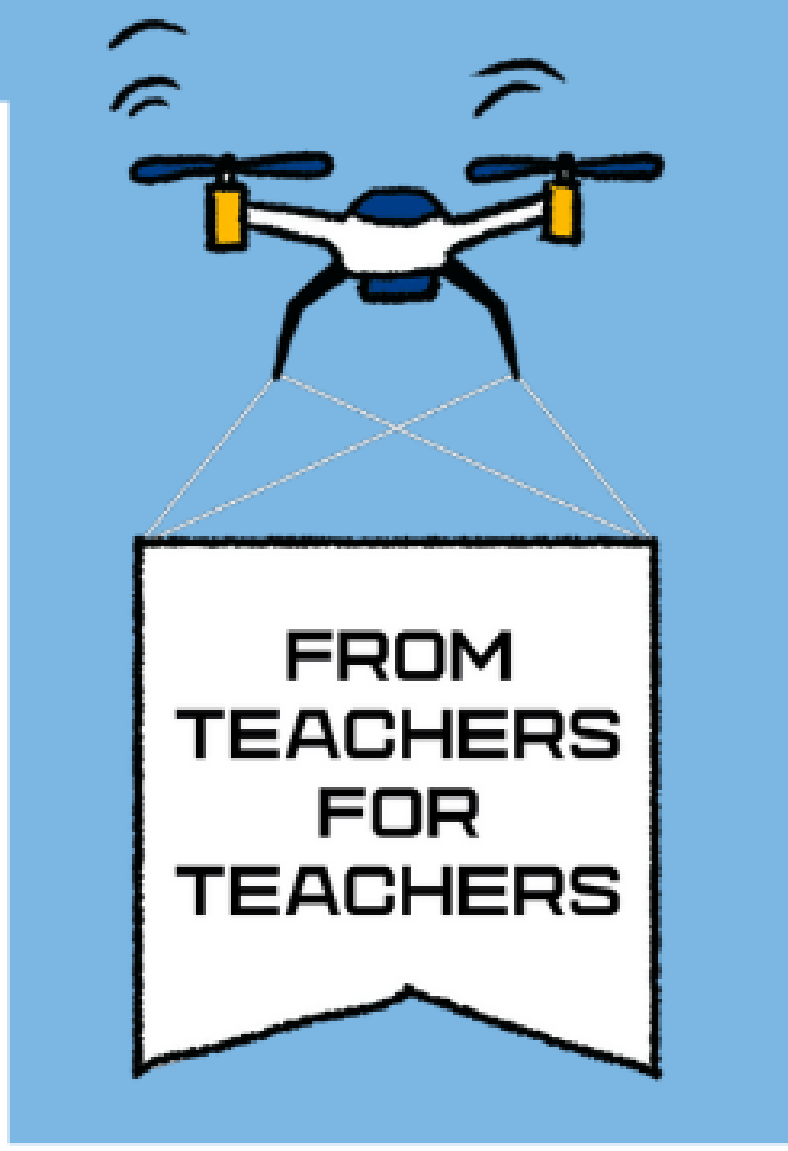
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STEM as a means of developing key interdisciplinary competencies in schoolchildren. 10 years of experience in applying the competency-based approach.

Thanks to the STEM approach, students can develop in several subject areas at once - computer science, physics, technology, engineering and mathematics. They understand that the studied, sometimes boring, theory also has an applied character. Apply their knowledge in practice. Gain critical thinking skills. Choose their future professions.

The curriculum of our school includes various areas of Robotics, such as Mechanical Engineering, Structural Engineering, Electrical Engineering, Electromechanical Engineering, Aerospace Engineering, Marine Engineering, Technology.

STEM lessons develop logic, engineering and analytical thinking style, give experience in teamwork and competitive activities. The structure of the lesson includes the stages of setting the problem, finding solutions, theory, practice (design, implementation, testing), engineering discussion and presentation.

In our school, elementary school students and high school students build their models, both from parts of various designers and from improvised materials, successfully present them at competitions, exhibitions, olympiads and competitions of various levels.

STEM subjects – the basis for the development of students' important transversal competencies