



STEAMING

Structured Course & Board Meeting

Krapina-Zagorje County, Croatia

6th – 10th June 2022



Green waves of the hills – Hrvatsko zagorje, continental part of Croatia

Photo by Ivan Hlebec

Project Partners:

P1: Clare Education Centre, Ireland

P2: Osnovna škola Matije Gupca, Croatia

P3: Luster municipality, Norway

P4: Directorate of Primary Education of Western Thessaloniki, Greece

P5: Agrupamento de Escolas Carlos Gargate, Portugal

P6: Department of STEM Education, Mary Immaculate College, Ireland



About STEAMING project and course

STEAM EDUCATION is an approach to learning that uses Science, Technology, Engineering, the Arts and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking. STEAM teaching and learning involves teachers and students who take thoughtful risks, engage in experiential learning, persist in problem-solving, embrace collaboration, and work through the creative process. These are the innovators, educators, leaders, and learners of the 21st century!

The STEAMing course aim to disseminate the learning and good practices from the STEAMing project. We will provide a theoretical context for the promotion of STEAM teaching and learning approaches in the classroom. Participants will be invited to take on the role of young learners, but also observe activities from the teachers' point of view through reflection and discussion. STEAM encourages us to open the doors to the real world and use real practices of wonder, critique, inquiry and innovation in our teaching and learning. More about STEAMing Erasmus+ project: <https://steamingproject.eu/>

PURPOSE

The main purpose of the course is to help teachers to understand the importance of STEAM education and improve STEAM teaching and learning in their classrooms and schools. Participants will become familiar with the impact they can have on children through the organisation of active engagement in STEAM activities in a fun and innovative, yet highly educational manner. They will learn how to boost children's imagination and natural gift of questioning, by implementing scientific ways of thinking and science methodology in their work and through application of problem solving skills.

LEARNING OUTCOMES

- Learn about active STEAM teaching methodologies
- Explore, develop and evaluate 'best practices' with the collective participation of European teachers, trainers, principals and policymakers
- Develop and improve learning processes with new ideas aimed at increasing students' interest and motivation using stimulating activities and materials from the real world
- Discover the advantages of creating a fun learning environment for teaching about and through STEAM
- Explore how children and especially girls and marginalised pupils can benefit from the incorporation of active and collaborative STEAM education
- Incorporate STEAM teaching and learning skills into the learning environment and curriculum
- Create STEAM learning activities, based on real life and problems and concrete experience incorporating the skills of scientific enquiry processes
- Reflect on their own practices, helping them build small groups and networks of cooperation in order to strengthen future projects and activities concerning STEAM.



About host...

Republic of Croatia is a country in Central and Southeast Europe, on the coast of the Adriatic Sea. It borders Hungary to the northeast, Serbia to the east, Bosnia and Herzegovina, and Montenegro to the southeast, and Slovenia to the northwest. The country spans an area of 56,594 square kilometers (21,851 square miles), with a population of nearly 3.9 million. Zagreb is the capital and largest city.

Croatia is geographically diverse. The crescent-shaped country features low mountains and highlands near the Adriatic coastline, flat plains that hug the Hungarian border, and a multitude of islands. Over a thousand islands are found off this coastline. Many are major tourist areas including the Dalmatian coast.

Most of Croatia has a moderately warm and rainy continental climate. In mountainous regions, winters are cold and snowy, and the summers are mild. The country's coastal areas have a Mediterranean climate with hot, sunny summers and mild winters.

Krapina-Zagorje County is a county in northern Croatia, bordering Slovenia. As of the 2011 census, the county had 132,892 residents. The population density is 110 people per km².

Hrvatsko zagorje has a gorgeous undulating landscape crisscrossed by hills and rivers.

Krapina is the famous archaeological site of Homo Krapiniensis (excavation site of a 100,000-year-old Neanderthal man in caves near the central town of Krapina).

The county contains many vineyards. Zagorje has many thermal springs and spas like Tuhelj Spa (Tuheljske toplice) and Stubica Spa (Stubičke toplice). Marija Bistrica is the biggest Marianic sanctuary in Croatia and has been a place of pilgrimage for over 300 years. Also in the area are the medieval castles Veliki Tabor, Miljana, Bežanec, Milengrad, etc.

<https://en.wikipedia.org/wiki/Croatia>

https://en.wikipedia.org/wiki/Hrvatsko_Zagorje#/media/



Photo by Ivan Hlebec

Veliki Tabor castle

ES Matije Gupca Gornja Stubica

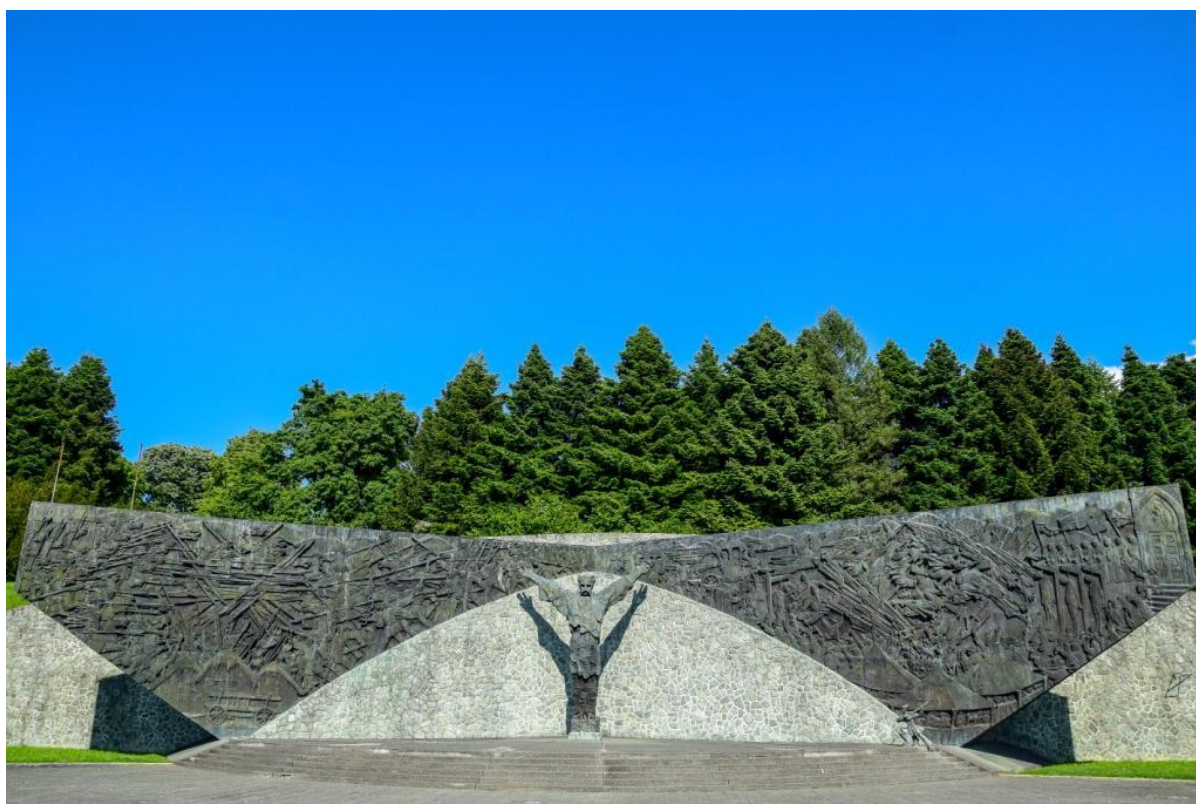


Primary education in Croatia starts at the age of six or seven and consists of eight grades. Compulsory education consists of eight grades of elementary school. Secondary education is provided by gymnasiums and vocational schools.

ES Matije Gupca Gornja Stubica has located just 40 km from Zagreb (the capital of Croatia), in a village and municipality Gornja Stubica, in a beautiful rural area in the south of Krapina-Zagorje County, on the slopes of Mount Medvednica. The school in Gornja Stubica has been operating since 1863.

ES Matije Gupca Gornja Stubica is a public primary school attended by 7-14 years old students from 1st to 8th grade in 24 classes. It consists of the main school in the settlement of Gornja Stubica with 320 students and four satellite schools in villages Dubovec (temporarily closed), Dobri Zdenci (7 students), Hum Stubički (13 students), and Sveti Matej (21 students). From the school year 2019/2020, the school has a Music School with 50 students in 3 departments.

The name of the school is given upon Matija Gubec, the leader of great peasant rebellion in 1573 which was the most important historical event in the area, therefore the event has a great monument in Gornja Stubica.



<p>Sunday June 5th</p>	<p>Arrival of participants – Hotel Well, Tuheljske Toplice</p>
<p>Monday June 6th</p>	<p>Hotel conference hall</p> <p>9.00 – 09.15 –Welcome and greetings from representatives from Ministry of education, Krapina-zagorje municipality representatives from the Department for education, culture, sport and technical culture and organizer- ES Matija Gubec principal Sanja Knezić</p> <p>9:15 – 9:30 - Ray McInerney, the main coordinator of Erasmus+ STEAMING project - Introduction about STEAMING project –with presentations of Handbook part 1,</p> <p>9:30 – 9:45 - Dr. Stephen Molloy - introduction to the State of the Art reports</p> <p>09.45 – 11:00 - partners’ State of the Art reports presented in the form: Introduction, Presentations and videos – part1 (Ireland and Greece)</p> <p>11.00 – 11.30 - Coffee break</p> <p>11:30- 12:45 - partners’ State of the Art reports: Introduction, Presentations and videos –part2 (Norway, Portugal, Croatia)</p> <p>13:00 – 14.00 Lunch in the hotel</p> <p>14: 15 – 14:35 – Ines Krušelj-Vidas: harmonising the group – the introductory activity of getting to know each other</p> <p>14:35– 15:35 Danijela Paradi, teacher adviser from ES Bedekovčina: one STEAM example of best practice</p> <p>15.35 – 16:00 Coffee break</p> <p>16.00 – 16.30 Damjan Zagorec, teacher adviser and Sandra Majsec: STEAM in 1st grade</p> <p>16:30-16:45 - Ines Krušelj-Vidas: Delegate feedback about first day - Mentimeter organisational information for Market Place activity and for the next day trip</p> <p>18:30 preparing the STEAMING marketplace</p> <p>19.00 - STEAMING Market Place</p> <p>20:30 light dinner</p>
<p>Tuesday June 7th</p>	<p><u>Educational and cultural Visit 1</u></p> <p>- trip to the Plitvice National Park with guide throughout the trip</p> <p>7:30 – departure from the hotel</p> <p>10:00 – workshop: The aquatic ecosystems with natural values presented by Krešimir Čulinović, dipl. ing. Conservation Service / Head of Presentation and Interpretation Section after that free time in the national park Plitvice Lakes</p> <p>13:00 – sandwich lunch</p> <p>14:00 – guided tour through Plitvice lakes</p> <p>18:00 – dinner in Rastoke</p>

Wednesday June 8th	<p>Hotel conference hall:</p> <p>9:00-10:00 – Dr Edward Corry – Adding the Art: Moving from STEM to STEAM 10:00 -11:00 Café workshop sessions: Partners and Course Delegates on meeting the STEAMING Challenge 11:00-11:30 Coffee break 11:30 – 12:15 Niamh O’Dea: STEAM Education in the Primary Classroom 12:15 – 12:45 STEAM Zeen and other best practice ideas and - Reflective Learning: 'Sharing Good Practice and Learning from Each Other' - Opportunity for delegates to tell interesting stories from their own teaching careers</p> <p>13:00 – 14:00 Lunch in the hotel 14:15- 15:15 – Sanela Jukić, math teacher: Show me the escape, workshop 15:15 – 15:45 Coffee break 15:45 – 16:30 Sanja Grbeš, professor of biology and chemistry: Microorganism, workshop 16:30 – 16:45 – evaluation of the day: Mentimeter</p> <p style="text-align: right;">Board Meeting Parallel session: 14:30 - 16:30 - BM meeting</p> <p>20:00 – dinner at Mihanović castle</p>
Thursday June 9th	<p><u>Educational and cultural Visit 2</u> – ES Matije Gupca Gornja Stubica and Museum of Hrvatsko zagorje – department in Gornja Stubica 8:30 – departure to Gornja Stubica 9:15 – 10:30 – visiting the satellite school in Hum Stubički, welcoming, presentation of school cooperative work 10:30-11:00 – coffee break 11:15 – 11:45 - arrival to ES Matije Gupca, welcoming 11:45 - 13:00 – presentation of the school and FABLAB and SCOPE workshops in school</p> <p>13:00 – 14:00 lunch in the school 14:15 – 16:15 Michael Browne, STEAM coordinator in Clare Education Centre: A short input on what STEAM learning could look like - and after that “hands on activity” for course participants and ESMGGS teachers 16:15 – 16:30 – evaluation of the day: Mentimeter 16:30 – 17:00 – coffee in the nature</p> <p>17:00 cultural visit Gornja Stubica and free time 19:00 dinner in local restaurant in Gornja Stubica</p>
Friday June 10th	<p>9:00 departure to the Science Park in Oroslavje 9:30-10:30 activities in Science Park 10.30 – 11.00 – coffee break 11:00 – 11:30 New projects – new opportunities- presentation of European Schoolnet Newsletter, Erasmus+ and e-Twinning project possibilities -Ines Krušelj-Vidas; 11.30 – 12.00 Summing up, Feedback and discussion, presentation of conclusions, Evaluation, Course certificate 12:00 - departure to Zagreb – lunch, cultural visit, airport</p>

Meet the lecturers

Ray McInerney	<p>Director of Clare Education Centre on secondment from his position as Principal of Ennis National School. Clare Education Centre has responsibility for the provision of professional development courses for teachers in response to both national priorities and locally identified needs. In addition, Clare Education Centre seeks out opportunities to engage schools in innovative and collaborative projects such as the STEAMING Erasmus+ project. Ray also works with school leaders through his work on the PDST Leadership Team and with the Centre for School Leadership. Ray's current area of interest in professional development is in the area of Leadership Caching for school leaders.</p>
Dr Stephen Molloy	<p>Dr Stephen Molloy is a former Associate Dean and director of European projects at Leeds Metropolitan (now Beckett) University, lecturer in sociology and visiting research fellow at the University of Leeds. Research and publications have encompassed UK and European educational policy and the work of German sociologist, Max Weber. Consultant and external adviser to EU research and development projects on educational and social inclusion in the UK, Ireland, Italy, Portugal, Spain, Norway, Sweden, Denmark, Iceland, Lithuania, Hungary, Romania, Bulgaria, Greece and Croatia.</p>
Danijela Paradi	<p>- a teacher mentor, teaches nature, biology and chemistry at Bedekovčina Elementary School. She is the leader of the Young Chemists group, the Bedex Student Cooperative and the international GLOBE school program. Participates in the planning and design of programs and workshops in the STEM area for a multi-year project for motivated and potentially gifted students "We strive for excellence". For several years she has been a mentor to students who demonstrate experiments at the Scientific Picnic. Participates in several Erasmus+ projects. She completed training for working with high-ability students at Radboud University - Radboud International Training on High Ability, and became a RITHA Practitioner. She continues her education in this area.</p> <p>- in her lecture / workshop the focus will be on approaches and methods of working when organizing workshops for students in STEAM field-examples from practice.</p>
Damjan Zagorec	<p>- Recently working at Elementary School Sveti Križ Začretje as a computer science teacher in lower grades, promoted to the professor advisor status. He has participated in school, county and state competitions in informatics and in correcting the state exams for the past few years.</p> <p>- Wondering what to do in IT class in the first grade of primary school, we came up with the idea of cross-curricular correlation. Thus, we connected the teaching of IT with the teaching of art culture and knowledge of mathematics. Pupils first create art works on paper in the art class, based on a template, and then in the IT class they "translate" them into digital form. In addition to using IT technology, pupils also name each geometric shape. From the newly created digital works, they created interactive digital, entertaining content - the game "memory" and "puzzle". The result of the project caused general excitement and satisfaction among pupils</p>

	and raised great interest for this way of teaching.
Sandra Majsec	- has been working at school, for many years in combined classes, and nowadays at Elementary School Sveti Križ Začretje in the second grade. For ten years she led Duga association, where she ran art and creative workshops and a puppet group. Even today, in her free time, she works with children to encourage creativity through various workshops and at school through classroom projects. She is the head of County's Professional Council for Teachers in Combined Classrooms in Krapina-Zagorje County.
Krešimir Čulinović	- dipl. ing. working in Conservation Service in National park Plitvice lakes, Head of Presentation and Interpretation Section of in National park Plitvice lakes – feel free to explore: https://np-plitvicka-jezera.hr/en/brochures/
Dr Edward Corry	Dr Edward Corry is a lecturer in Technology Enhanced Learning at MIC, Limerick. He is a member of the department of STEM Education in the college and has been involved with the STEAMing project over the past 3 years.
Niamh O’Dea	- primary teacher working in O’Callaghan’s Mills in Co. Clare, Ireland. Currently teaching Junior Infants, Senior Infants and 1st Class pupils, ranging from five to seven years old. She has been teaching since she graduated from Mary Immaculate College with a Bachelor of Education Degree in 2019. Last year, she returned to Mary Immaculate College and commenced my Master of Arts Degree in STEM Education. She has been completing this course part-time for the past year while teaching full-time also. The masters have already been hugely beneficial to her as it has allowed her to trial many new STEAM activities in her classroom and has led her to join Clare Education Centre’s Steaming Project. - She will be making a presentation entitled, ‘STEAM Education in the Primary Classroom’. She will discuss the work that has been done by both Clare Education Centre and a number of primary schools in Clare in promoting STEAM and spreading the word around Clare about the value of STEAM for children. Additionally, she will share practical ideas for integrating STEAM into the primary classroom, along with examples of activities that have been completed in our school.
Sanela Jukić	- a math teacher in elementary school in Slatina with 18 years’ experience. She is an award-winning teacher, mentor to gifted students, coauthor on math digital educational content IZZI for Profil Klett and a coauthor on textbooks and workbooks for math gifted students, also for Profil Klett. For the past few years she is a head of the county professional council of mathematics teachers, presenter at many conferences and author of many educational math content. - in the workshop it will first be shown an example of an Escape room game created for Erasmus students visiting OŠ Eugena Kumičića, Slatina. After some brief discussion, participants will be creating their own Escape room in groups on various themes. The lecturer will provide various online and offline tools for creating the story and materials
Sanja Grbeš	- a professor of biology and chemistry working at the Fr. Kaje Adžić Elementary School in the small town of Pleternica. She is the leader of

	<p>school cooperative, and in her free time she gladly participates in various projects, workshops, and designs them. She is one of the authors of textbooks for the sixth grade of elementary school.</p> <p>- presentation of microbiology to seventh grade students through research work: What is the most effective agent in the fight against various microorganisms? Getting to know the methods of growing various microorganisms on nutrient media, and the impact of various agents on their development.</p>
Michael Browne	<p>Michael Browne is a former primary teacher and principal. He is the author of a recently published series of mathematics textbooks, designed for use in the primary classroom. Michael is also the author of a number of series of science textbooks, which are used in the primary classroom. He is a part time lecturer in the STEM Department in Mary Immaculate College, where he lectures in both Science and Mathematics. Michael dedicates a lot of his time to the promotion of STEAM and the STEAM way of working. He does this by delivering in-service programmes in Clare Education Centre to practicing teachers and through school visits, when he supports teachers in their classrooms.</p>
Ines Krušelj-Vidas	<p>-teacher librarian advisor in ES Matije Gupca Gornja Stubica, project coordinator for several projects, in her work mainly focused on promoting learning skills among both students and teachers.</p>

Special thanks to:

- dr. Kazimir Miculinić,
head of the Service
for protection,
maintenance,
preservation, promotion and use of the National Park Plitvice lakes



**PLITVIČKA
JEZERA** Nacionalni park
National Park

- Melita Milić, STEM
Executive Editor in
Editorial Department
of Profil Klett d.o.o.
publisher



STEM PROFIL KLETT











priroda – biologija – kemija – fizika – tehnička kultura – informatika – matematika

Participants

Clare Education Centre, Ireland	Luster kommune, Norway	Agrupamento de Escolas Carlos Gargate, Portugal
Ray McInerney (BM)	Knut Åge Teigen (BM)	Rui Páscoa (BM)
Michael Browne (BM)	Mona Kristin Bukve (BM)	Ângela Veiga (BM)
Geraldine Greene	Norill Terese Norheim	Mário Fortuna
Dermot O'Gorman	Hilde Boksasp Lerum	Maria Filomena Santos
Bob Enright	Ellen Kristin Havellen	Teresa Santos
Lorraine Eustace	Eirinn Teigen Kvåle	Sérgio Gonçalves
Darryl Eade	Agnese Bremere	
Elaine White	Katrin Læg Reid Nes	Osnovna škola Matije Gupca, Croatia
Niamh O'Dea		Sanja Knezić (BM)
Damien Collins	Mary Immaculate College of Education, Ireland	Ines Krušelj-Vidas (BM)
Sorcha Curtin	Edward Corry	Nikola Grden
Éadaoin Ryan	Brendan Barry	Neven Košec
Annmarie Meehan		Željka Franjković
Deirdre Hehir	Directorate of Primary Education of Western Thessaloniki, Greece	Martina Goluban
Karen Hogan	Anastasia Mallou (BM)	Marko Mihaljinec
Lisa Carkill	Periklis Christidis (BM)	Armina Rod
Katie Campbell		Gordana Janđel
Michael Sheedy	External Evaluator, England	Danijela Miljan
MJ Malone	Steve Molloy	Štefanija Boltek Mihaljevski
Brian Curtin		
Riona Browne		

Weather forecast and practical advice

It is said that June is unstable precursor of summer (so, we could have all kinds of weather)
You may check the local weather app [yr.no](#) (yes, in Croatia it is in use, too)

	Table		Graph				
	Night	Morning	Afternoon	Evening	Max/min temp.	Precip.	Wind
Sunday 5 June					31° / 18°		3 m/s
Monday 6 June					24° / 17°	7.9 mm	4 m/s
Tuesday 7 June					23° / 16°	3.2 mm	3 m/s
Wednesday 8 June					24° / 14°	9.7 mm	2 m/s
Thursday 9 June					22° / 13°	0.2 mm	6 m/s

Most of Croatia has a moderately warm and rainy continental climate.

In mountainous regions, winters are cold and snowy, and the summers are mild (this is the area of Plitvice lakes)

The country's coastal areas have a Mediterranean climate with hot, sunny summers and mild winters (information for persons who will use some airports at the coast).

Clothes and shoes

Leisure outfit (leisure trousers and good walking shoes for the short hikes, but also raincoat; and don't forget swimming suits and costumes, sandals, hats or caps). Very important is to have suntan lotion- because the sun is strong (if we will have it).

Sunday: Hotel Well, Tuheljske Toplice

The spa has thermal water and a healing mud spring, surrounded by green nature and hills.

<https://www.terme-tuhelj.hr/en>



http://seemice.com/storage/objects/thumbnail_IYge6swRx5kZc8J.jpg

Monday and Wednesday – Course program in the congress room of the Hotel Well

Tuesday: Trip to the National park Plitvice Lakes

- At least 10% of the land in Croatia is made up of 8 national parks, 11 nature parks, and two nature reserves. More about Plitvice lakes: <https://np-plitvicka-jezera.hr/en/about-the-park/general-information/>



Photo by Ivan Hlebec

Rastoke - village on the road back (dinner)



<https://media.timeout.com/images/105318159/750/422/image.jpg>

Thursday:

There is only one living witness of the great peasant rebellion: **the linden tree** under which the rebels met. In the cottage under a linden tree today we collect courage for everyday life.



<https://www.pp-medvednica.hr/wp-content/uploads/2019/05/Gupceva-lipa-300x225.jpg>

Oršić castle – When the Counts Oršić left, the castle was taken over by a peasant cooperative, which gave it to the school because there was not enough space in the old building for many students. In 1972, a new school building was built, and the Museum of Peasant Rebellions was opened in the castle.



Photo: Muzej seljačkih buna

Friday:

Private Science Park in Oroslavje: <https://parkznanosti.com/>



https://www.dinamikom.eu/images/sadrzaj/600-700/628/CL_park-znanosti-01.jpg

Zagreb – capital of Croatia



Photo by Ivan Hlebec