



“STEMAction for the Future” PROJECT MANUAL				
Task/ activities/ TPM/LTTA	Subject/Content	Responsibility and Instruction	Criteria for Participation	Date/ Deadline
Creation of Project Management Team	Forming the school project management team: A team will be formed in each school to be responsible for each step of the project. The team responsible for creation of: • Finance • Time • Conflict • Dissemination • Assessment /Evaluation Plan • Quality Assurance/Monitoring Plan to get consent from the families to share students' work and activities. • Creating brochures/leaflets, posters for dissemination. • Photographing, filming project activities, and sharing in project website and social media • Editing and creating the photographs and videos to share on the website and social media. • Collect comments and account for the followers monthly. • Publishing articles about the project in order to inform the local community. • The STEM projects of the students will be published and shared on the project website. • Organising eTwinning events for dissemination. • Organising seminars with our partners to inform the educational community about the project activities and outcomes.	All partners These all plans answer the questions such as; What is the task/problem? Who is/are responsible? How would it be done? Where and when? What is the cost? Which material is needed? What are the assessment tools? Who will participate?	In line with the project objectives each institution will be responsible for building their PM team.	March 2022



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Selection of the target group	- Determining the needs of disadvantaged students (language skills, academic achievement in STEAM disciplines, technological tools needs) - An after-school course will be launched to meet students' needs. - Related teachers	All schools -Cooperation with school counselling service	Students who have cultural, social, economic, physical, and learning obstacles/relevant teachers	March 2022- 2024
Project Logo	- The project logo will be created by the contribution of each partner. - The logo competition will be organised in each institution. Among these logos, the project logo will be determined by the votes of the partners.	All schools		February 2022
Project Website	- The project web page will be active for at least 5 years. - News and information about the project will be shared regularly on the web page by each institution.	IES RC		March 2022 to May 2024
Project Corner	The project corner will be created for dissemination and internal communication in each institution.	All Partners		March 2022 to May 2024
Publishing brochure	For the dissemination of the project, a brochure including the project objectives, activities, partners and expected results will be published.	All partners Native language		March-April 2022
1st TPM Albacate, SPAIN March 2022	- Responsibilities and task sharing . - Project management and finance management plan.	IES RC (host partner and project coordinator)	head/representant of institutions, contact and a key person.	March 2022 16-18 th (3 days)
	Assessment methodology, data collection tools	ALKU (university)	-	Feb-2022
C1 Teacher Training Course-1 Outdoor STEM Education Alanya, TURKEY April-2022 25-29	Drafting program Day 1 -Welcome ceremony -Implementing pre-tests -STEM Education briefly historical background -Integrated teaching -Integrated learning -Scientific inquiry and STEM education -STEM Education Models (Project- Problem Based STEM Education, Engineering Design-Based STEM Education) -Characteristics of STEM lessons/units	ALKU-Turkey (host partner) IES RC (coordinator) Task distribution about the teacher training programme will be decided by the coordinator institution among the ALKU, Yenikoy Ortaokulu and Zeleni Subotice a minimum of 2 weeks prior.	The participant teachers will be chosen by the project management team. <i>The institutions will take into consideration selection criteria as below:</i> - Their skills, diligence, knowledge, and enthusiasm	October-November 2022 31-4 th (5 days)



	Day 2 -Integration of 21 st century skills- making visual thinking skills in STEM lessons -Backward design to development of STEM unit /lesson -Identifying desired results/learning outcomes for STEM education -Evaluation of learning outcomes for STEM Education -Planning learning experience and teaching process for STEM education Day 3 -Outdoor STEM Education -Design by Nature (What is Biomimicry? How can it help us for teaching STEM?) -Writing learning scenarios for STEM-based problems. -Development of STEM activities Day 4 -Outdoor STEM Education -Design by Nature (What is Biomimicry? How can it help us for teaching STEM?) -Writing learning scenarios for STEM-based problems. -Development of STEM activities Day 5 -Presentation of developed STEM unit/ learning modules/ lessons -Evaluation of all learning outcomes -Redesigning of STEM activities -Evolution of the pilot implementation and teacher training course -Challenges and opportunities for teachers and learners -Evaluation of the course / survey-questionnaire- reflection of participants	The participant list/arrival and departure days will be shared with the coordinator and leading organisation by each institution a minimum 15 days before physical mobility.	-The level of English-understanding, and communication skills -Expertise in the field -Team working skills/ cooperation 3 participants from each institutions	
C2 Teacher Training Course-2 Environmental issues and fighting against climate change	Drafting program Day 1 -Welcome ceremony -Overview of the course -Team building -European policies and examples of good practises	Zeleni Subotice-Serbia (host partner) IES RC (coordinator) ALKU (university)	The participant teachers will be chosen by the project management team. <i>The institutions will take into consideration selection criteria as below:</i>	November-December 2022 28-2nd



Subotica, SERBIA October 2022	-Environmental issues and climate change- briefly cause-effects solutions -Taking action for the issues -Where should we start? Day 2 - Environmental and Sustainable Development (the key skill for sustainable development) -Ecology and Environment- Teaching methodologies -How can we make our children active against environmental pollution and climate change? -Turning schools to eco-friendly schools -Sharing good practices Day 3 -Sustainable development beyond the school walls: a change in lifestyle -Adapting and using sustainable development techniques in your own teaching context -Development of STEM-based learning modules for environment education (a practical guide to follow) -How to create outdoor activities based on the learning needs Day 4 -Development of learning modules: Teachers will work in a team to develop learning modules for children. The modules will be designed in line integrated STEM education approach which is focused on environmental issues and climate change. Day5 -Participants will demonstrate the STEM-based developed activities about environmental education -Experts and peer evaluation -Improving the learning modules -Evaluation of the course / survey-questionnaire- reflection of participants	Task distribution about the teacher training programme will be decided by the coordinator institution among the ALKU, Yenikoy Ortaokulu and Zeleni Subotice a minimum of 2 weeks prior.	- Their skills, diligence, knowledge, and enthusiasm -The level of English-understanding, and communication skills -Expertise in the field -Team working skills/ cooperation 3 participants from each institutions	(5 days)
C3 Teacher Training Course-3 Digital tool/app	Drafting program Day 1 - Scratch training - Scratch programming - Scratch IDE - Programming by code - Basic functions	IES RC-Spain (host partner and project coordinator) Task distribution about the teacher training programme	The participant teachers will be chosen by the project management team.	January 2023 16-20th



/educational robotics in STEM education Albacete, SPAIN	- Scratch projects Day 2 - Arduino training - What Arduino is - Fundamental elements of the controller board - Programming of any Arduino board, use of bitbloq - Digital components, sensors and actuators - Analogue sensors - Variables, conditionals – Loops – Functions - Advanced programming - Arduino programming - Arduino IDE - Programming by code - Libraries: freedom of components - Time management Day 3 - ApplInventor training - Mobile applications - Creation of Android applications with ApplInventor - Event management – Interface – Sensors - Database Day 4 - Practical project - A didactic proposal related to environmental action using robotic technology will be carried out. - Implementation of the project in international working groups. Day 5 - Presentation of the projects. - Elaboration of basic didactic guides for our students. - Assessment of the training activity (self-assessment, group assessment, expert assessment). - Sharing opinions. - Final conclusions. The training will be based on practical examples with robotics, getting educational materials that are usually available in schools (Robotics Kits). This knowledge will be transferred to students, using gaming methodology.	will be decided by the coordinator institution among the ALKU, Yenikoy Ortaokulu and Zeleni Subotice a minimum of 2 weeks prior.	<i>The institutions will take into consideration selection criteria as below:</i> - Their skills, diligence, knowledge, and enthusiasm -The level of English-understanding, and communication skills -Expertise in the field -Team working skills/ cooperation. 3 participants from each instituions	(5 days)
Afterschool Programme (STEAM workshops)	• STEM activities to develop students key skills in STEM fields • Robotic courses (coding-sensors to use- educational robotics) • Digital tools/ apps for learning	All schools Each school will develop them in its country.	Students who have cultural, social, economic, physical, and learning obstacles	September 2022 to May 2024



	Coding- developing apps in purpose			
Preparation of STEM lesson/activity plans	Teachers from partner schools will prepare STEAM lesson/activities for the C4 meeting “STEMAction for green energy”	All schools Each Erasmus school team will prepare a lesson.	-	February 2023
C4 STEMAction for green energy Siauliai , Lithuania	- The activities prepared by each partner school with the STEM education approach in out-of-school settings will be piloted. 5 activities prepared by 5 partner schools will be held in 5 days. - The shared theme for the activities determined as “STEMAction for green energy” - The activities will be developed by considering developing STEM solutions for developing green energy solutions. Storybooks will be prepared by students for shared theme “STEMAction for green energy”	Šiauliai Jovaro progimnazija Lithuania (host partner) - The teachers’ role will be as a facilitator during the implementation of the activities. - The academicians (Turkey Univ) will collect data from students and teachers before, during and at the end of the activity. - The experts of NGO (Serbia) will observe and take field notes to weaknesses and strong parts of the activity. - The students and teachers will be chosen at least before a month of the LTTA. - The instructional materials for the activities will be prepared by each school for 30 students. - The materials will bring to the host school by visitors.	- The selection criteria participants will be taken into consideration which will be prepared by each institution in accordance with the general principles and criteria by the coordinator. - Academicians will prepare assessment tools Schools: 5 students and 3 teachers ALKU and ZS, 3 participants from each	March 2023 20-24th (5 days)

Preparation of STEM lesson/activity plans	Teachers from partner schools will prepare STEAM lesson/activities for the C5 meeting "STEMAction for nature-based solution"	All schools Each Erasmus school team will prepare a lesson.		March-April 2023
C5 STEMAction for nature-based solution Antalya, Turkey	- The activities prepared by each partner school with the STEM education approach in out-of-school settings will be piloted. 6 activities prepared by 6 partner schools will be held in 5 days. - The shared theme for the activities determined as "STEMAction for nature-based solution" The activities will be developed by considering developing STEM solutions for developing nature-based solutions. Storybooks will be prepared by students for shared theme "STEMAction for nature-based solution"	Yenikoy Ortaokulu Turkey (host partner) - The teachers' role will be as a facilitator during the implementation of the activities. - The academicians (Turkey Univ) will collect data from students and teachers before, during and at the end of the activity. - The experts of NGO (Serbia) will observe and take field notes to weaknesses and strong parts of the activity. - The students and teachers will be chosen at least before a month of the LTTA. - The instructional materials for the activities will be prepared by each school for 30 students. - The materials will bring to the host school by visitors.	The selection criteria participants will be taken into consideration which will be prepared by each institution in accordance with the general principles and criteria by the coordinator. -Academicians will prepare assessment tools Schools: 5 students and 3 teachers ALKU and ZS, 3 participants from each	April 2023 24-28th (5 days)

C5 and C8 host school has been changed due to external organisational problems (earthquake in Turkey)



Preparation of STEM lesson/activity plans	Teachers from partner schools will prepare STEAM lesson/activities for the C6 meeting "STEMAction for pollution"	All schools Each Erasmus school team will prepare a lesson.	-	September -October 2023
C6 STEMAction for pollution Nitra, Slovakia	- The activities prepared by each partner school with the STEM education approach in out-of-school settings will be piloted. 6 activities prepared by 6 partner schools will be held in 5 days. - The shared theme for the activities determined as "STEMAction for pollution" The activities will be developed by considering developing STEM solutions for developing nature-based solutions. Storybooks will be prepared by students for shared theme "STEMAction for nature-based solution"	Základná škola, Škultétyho 1, Nitra, Slovakia (host partner) - The teachers' role will be as a facilitator during the implementation of the activities. - The academicians (Turkey Univ) will collect data from students and teachers before, during and at the end of the activity. - The experts of NGO (Serbia) will observe and take field notes to weaknesses and strong parts of the activity. - The students and teachers will be chosen at least before a month of the LTTA. - The instructional materials for the activities will be prepared by each school for 30 students.	The selection criteria participants will be taken into consideration which will be prepared by each institution in accordance with the general principles and criteria by the coordinator. -Academicians will prepare assessment tools. Schools: 5 students and 3 teachers ALKU and ZS, 3 participants from each	October 2023 16th-20th (5 days)



		The materials will bring to the host school by visitors.		
Preparation of STEM lesson/activity plans	Teachers from partner schools will prepare STEAM lesson/activities for the C7 meeting “STEMAction for fighting climate change”	All schools Each Erasmus school team will prepare a lesson.		March-April 2024
C7 Fighting against climate change Swidnik, Poland	- The activities prepared by each partner school with the STEM education approach in out-of-school settings will be piloted. 6 activities prepared by 6 partner schools will be held in 5 days. - The shared theme for the activities determined as “STEMAction for pollution” The activities will be developed by considering developing STEM solutions for developing nature-based solutions. Storybooks will be prepared by students for shared theme “STEMAction for nature-based solution”	Zespół Szkolno-Przedszkolny nr 1 Poland (host partner) All partners - The teachers’ role will be as a facilitator during the implementation of the activities. - The academicians (Turkey Univ) will collect data from students and teachers before, during and at the end of the activity. - The experts of NGO (Serbia) will observe and take field notes to weaknesses and strong parts of the activity. - The students and teachers will be chosen at least before a month of the LTTA. - The instructional materials for the activities will be prepared by each school for 30 students.	The selection criteria participants will be taken into consideration which will be prepared by each institution in accordance with the general principles and criteria by the coordinator. -Academicians will prepare assessment tools. Schools: 5 students and 3 teachers ALKU and ZS, 3 participants from each	April 2024 22th-26th (5 days)



		The materials will bring to the host school by visitors.		
Preparation of STEM lesson/activity plans	The teachers from partner schools will prepare STEM lesson/activities for the C8 meeting "Guardians of Environment- Robot Action for Pollution"	All schools. Each Erasmus school team will prepare a lesson.		December 2023 January 2024
C8 Guardians of Environment- Robot Action for Pollution Bulgaria	- The activities prepared by each partner school with the STEM education approach in out-of-school settings will be piloted. 6 activities prepared by 6 partner schools will be held in 5 days. - The shared theme for the activities determined as "Guardians of Environment- Robot Action for Pollution" The activities will be developed by considering developing STEM solutions for developing nature-based solutions. - Storybooks will be prepared by students for shared.	All partners 25. Primary School "Dr. Petar Beron" Bulgaria (host partner) - The teachers' role will be as a facilitator during the implementation of the activities. - The academicians (Turkey Univ) will collect data from students and teachers before, during and at the end of the activity. - The experts of NGO (Serbia) will observe and take field notes to weaknesses and strong parts of the activity. - The students and teachers will be chosen at least before a month of the LTTA. - The instructional materials for the	The selection criteria participants will be taken into consideration which will be prepared by each institution in accordance with the general principles and criteria by the coordinator. -Academicians will prepare assessment tools. Schools: 5 students and 3 teachers ALKU and ZS, 3 participants from each	February 2024 19 th -23 th (5 days)



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		activities will be prepared by each school for 30 students. The materials will bring to the host school by visitors.		
C5 and C8 host school has been changed due to external organisational problems (earthquake in Turkey)				
Collections of all documents	The developed activities, published materials, dissemination activities, photos, surveys, questionnaire etc. will be collected after each mobility.	All partners		In a month after each mobility.
2TPM BULGARIA Evaluation of the project and final report	The project impact will be evaluated by the academician and final report will be written with the contribution of all project partners.	All partners 25. Primary School "Dr. Petar Beron" Bulgaria (host partner)	-Coordinators of STEMAction project, headmasters and responsible of institutions and members of Erasmus team of each institution.	May 2024 13 th -15 th (3 days)

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*ZS (Zeleni Subotice, NOG)

Signed by coordinators partners:

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Albacete, March 18th, 2022