Learning scenario with MARG

PART 1: General information

Title of the scenario:	Let's save the water	
Keywords:	Virtual water, effective footprint, water scarcity, pollution, quality and sustainable water use, environmental - economic - social problems , water crisis	
Name(s) of the scenario's creator(s):	Despoina Eleftheria Meleouni	
Creative Commons License **of the scenario:**	Attribution ☐	Attribution-NoDerivs ☐
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	Attribution-NonCommercial-ShareAlike ■	Attribution-NonCommercial-NoDerivs ☐
Estimated duration of the scenario's activities:	120 minutes	
Age range of learners:	9-12 years old	
Learners' special characteristics: (i.e. immigrants, special needs)	None	
Learning subject based on your curriculum to which the scenario relates:	Environmental Education	
To which Sustainable Development Goal (s) does the scenario relate to : (highlight it/them)	{ } No Poverty	{ } Industry, Innovation and infrastructure
	{ } Zero Hunger	{ **X** } Reduced Inequalities
	{ } Good Health and Well-Being	{ } Sustainable Cities and Communities
	{ } Quality Education	{ **X** } Responsible Consumption and Production
	{ } Gender Equality	{ } Climate Action
	{ **X** } Clean Water and Sanitation	{ } Life Below Water
	{ } Affordable and Clean Energy	{ } Life On Land
	{ } Decent Work and Economic Growth	{ } Peace, Justice and Strong Institutions
		{ } Partnerships For The Goals
Which 21st century skill(s) does the scenario involve: (highlight it/them)	{ **X** } Information and data literacy	{ **X** } Critical thinking
	{ **X** } Communication	{ **X** } Active citizenship
	{ **X** } Collaboration	{} Respect for differences
	{ **X** } Problem solving	

PART 2: Learning outcomes of the scenario	
In terms of <u>knowledge</u>	The student should be able to: ○ recognize the environmental and social issues of which the international community abounds. ○ explain the concepts of "water footprint", "virtual water" and "water crisis" and connect them with the way of life of people and the current events and environmental problems. ○ understand the depth of pollution and its effects on living organisms and natural processes in nature. ○ compose feasible and applicable solutions for the suppression of the exacerbation of environmental problems.
In terms of <u>skills</u>	The student should be able to: ○ organize the information it obtains and manage it in order to form a point of view. ○ present in a variety of ways the messages it pursues to share. ○ adopt a positive attitude towards the issues that are under investigation.
In terms of <u>competences</u>	The student should be able to: ○ work and act collaboratively. ○ propose and plan actions that are considered beneficial for the treatment of water pollution, unnecessary use of water and limited access to drinking water.

PART 3: Description of the game	
Narrative description of the game plot:	The described game will be developed in the facilities of the Private School "College of Rhodes", so that the participants can enjoy the logistical infrastructure and the possibilities that the environment offers. Next, the exploratory approach is understood as an appropriate instructive approach, which will contribute to the smooth structure and execution of the scenario. Based on the above, through a discreet guidance, learners are requested to discover and be guided to knowledge, by offering the appropriate tools and questions. Regarding the way the game is structured, it is worth noting that the last one is subject to a functional separation into four independent but interconnected stages, in each of which individuals interact with the game characters, derive and process information and are pushed to find solutions, in the context of a good cooperation. The beginning of the game is marked by the players' visit to the first station: the Chemistry Lab. There they will meet the head of the laboratory, whose responsibility is to examine the quality of certain freshwater samples. However, in order to achieve this, he will need the help of the players. More precisely, through the digital application, the distillate of knowledge that the

	trainees will discover and acquire will be presented and the result of this will be the excitement of their interest and thought, as well as their presentation for extracting and exchanging observations and conclusions. The purpose of this "station" is to investigate the maintenance of surface and groundwater pollution, as well as the effects that follow and affect the dependent organisms. The next stop on the digital map is the school yard, where the garden with lush grass and various species of plants extend. There the participants will get in touch with the gardener, who will inform them about the equally reckless and incorrect use of water, water scarcity and the contamination of groundwater streams. A new problematic situation will emerge, as players will be called upon at the team level to seek solutions to suppress the escalation of this issue. Equally important point-station that the players are going to visit are the school water meters. There they will get acquainted with the concepts "Virtual water" and "Water footprint", with the help of the Public Water Company employee. In conclusion, the last stop is considered to be the foreign language classroom, where a qualified United Nations (UN) volunteer will aim to monopolize the players' attention to the inequalities between states, in terms of adequacy and access to clean drinking water. The game ends when the participants visit each of the stations, gather the necessary information and data and decude conclusions and solutions, which can be useful in eliminating the burning environmental and social issues faced by the world community. Additionally, it is worth mentioning the fact that each character of the game -after the successful completion of each mission- provides a series of letters, which will serve in the composition of a relevant (thematically) adage, at the end of the game.
Game objectives:	Learners should be able to reflect on the ecological issues being explored and, utilizing their critical ability and pre-existing and newly acquired knowledge and skills, in order to formulate and present workable solutions.
Does the scenario refer to a specific location? If yes, specify. If no, write everywhere.	Yes, on the premises of the Private School "Rhodes College".
Characters:	Chemist, gardener, Public Water Company employee, UN specialized volunteer.
Scenes:	The described game consists of four (4) scenes / points of interest: 1. Chemistry Laboratory 2. School yard 3. School water meters 4. Foreign language classroom

Type of work: Individual/ collaboration	Teamwork (group of 4 people)
Does the game involve different player roles? If yes, specify.	No

PART 4: Description of the learning scenario activities

	Learning settings	Estimated time
Before the game:	Students are given instructions on how to use mobile devices, as well as guidance on playing MARG. Then, the trainees are divided into groups of four (4) people.	10’
During the game:	An important condition for the start of the game, is the composition and the equal distribution of the individuals - players, aiming at the smooth processing of the game. After the completion of the process, the groups -with the utilization of the MARG application- and the contribution of the teacher, are based on the digital map and its content and then head to the first station, where they are informed about the thematic core that pervades the program and the activities - missions. More specifically, the four (4) scenes - points of interest are the following: Scene 1: <u>Chemistry Laboratory</u> With the visit of the trainees to the described space, the first part of the thematic area that is examined in the context of the experiential program will be announced. More clearly, the character of the game (Chemist), through the provision of the necessary information, will address key environmental issues related to water quality, surface and groundwater pollution, as well as its effects on living organisms. The closure of the exposure to new information will be an incentive for the awareness and reflection of the participants and, consequently, the voluntary finding of solutions. In addition, the first station will reward them with the necessary knowledge so that they can be led smoothly to the next stage. Scene 2: <u>Schoolyard (garden)</u> The character (gardener) in the second destination in a row, is going to raise new concerns, regarding	70’

	water scarcity, reckless, pointless and wrong use of water, as well as the contamination of groundwater streams and its effects on living organisms . Finally, through a short digital questionnaire, the degree of perception and understanding of what was said will be assessed and then, new data will be collected to decipher the characters of the adage, which will be composed at the end of the game. Scene 3: School water meters Next stop are the school water meters, where the participants of the program will come in contact with the employee of Public Water Company, through which they will get to know and draw information about the concepts "virtual water", "water footprint" as well as about nature and the danger of a global water crisis. They will then answer the corresponding questions that will emerge through the digital application and save the new information shared with them. Scene 4: Foreign language classroom One of the leading goals of the UN is to reduce inequalities at the individual, collective and state levels. The issue of contamination and depletion of drinking water supplies is said to be directly related to poverty and poor living conditions in developing countries. Based on the above, the last scene focuses on the global information of the players and the motivation of the latter, for useful thinking and action.	
After the game:	After gathering and obtaining all the necessary information, conclusions are exported and solutions are formulated, responding to the magnitude of the raging and existing ecological and social crisis, which concerns the international community. The participants are therefore invited, within a collaborative framework, to communicate their ideas, through audiovisual materials and media (posters, short films, texts, etc.) and then, passing the information given to them - after the successful completion of each questionnaire - to decipher and compose the relevant opinion.	40′
	Total:	120′

PART 5: Prerequisite knowledge and supportive material	
Learners' prerequisite knowledge:	Basic knowledge about the use of mobile devices, basic knowledge about children's rights

Infrastructure/ equipment needed for implementing the scenario:	Mobile devices with data-internet connectivity
Other learning resources needed:	Under configuration

PART 6: Approach towards the assessment of the learning outcomes	
Learners' assessment approach:	○ Digital quizzes ○ Questionnaires ○ Creation of audiovisual material, based on the examined subject