**Learning scenario with MARG**

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| PART 1: General information | | |
| Title of the scenario: | Τhe mysterious extinction of species in the island of Rhodes | |
| Keywords: | deforestation, desertification, droughts, floods, endangered animals endemicity | |
| Name(s) of the scenario’s creator(s): | Alevizou Tsampika  Magkafa Zoopigi | |
| [Creative Commons License](https://creativecommons.org/licenses/?lang=en) of the scenario: | Attribution | Attribution-NoDerivs |
| Attiribution-ShareAlike | Attribution-NonCommercial |
| Attribution-NonCommercial-ShareAlike | Attribution-NonCommercial-  NoDerivs |
| Estimated duration of the scenario’s activities: | 120 minutes | |
| Age range of learners: | 11-12 years old (sixth grade) | |
| Learners’ special characteristics: (i.e. immigrants, special needs) | none | |
| Learning subject based on your curriculum to which the scenario relates: | Geography  Physics | |
| To which Sustainable Development Goal (s) does the scenario relate to : (highlight it/them) | { } No Poverty | { } Industry, Innovation and infrastructure |
| { } Zero Hunger | { } Reduced Inequalities |
| { } Good Health and Well-Being | { } Sustainable Cities and Communities |
| { } Quality Education | { } Responsible Consumption and Production |
| { } Gender Equality | { } Climate Action |
| { } Clean Water and Sanitation | { } Life Below Water |
| { } Affordable and Clean Energy | {X} 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 |  |

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| PART 2: Learning outcomes of the scenario | |
| In terms of knowledge | The learner knows and understands:   * the flora and fauna of his/her place * the major problems (deforestation, desertification, droughts, floods, endangered animals) |
| In terms of skills | The learner is able to:   * to adopt positive attitudes toward environmental issues on the island * to use augmented reality technology for educational purposes |
| In terms of competences | The learner:   * proposes solutions for improving the quality of life on land * proposes interventions in their immediate social environment to address the problems of the wider environment |

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| PART 3: Description of the game | |
| Narrative description of the game plot: | The game begins with the appearance of the forester who expresses his complaints, talks about the problems faced by the flora and fauna of Rhodes and asks for the help of students / young biologists to solve the problems faced by islands animals and plants. The plot evolves in the natural environment of Rhodes. There, with their equipment, the players will come in contact with the flora and fauna of the island, they will discover and understand the problems that exist and the dangers that lurk and with the appropriate suggestions and the feedback that they will receive through the mystery game, they will seek and propose solutions for a better life on land. |
| Game objectives: | Τhe goals of the players are to get in touch and get to know the flora and fauna of their region as well as explore the problems that exist. After researching, collecting and processing data, they are expected to think of solutions to address them and ensure a better life on land for all. |
| Does the scenario refer to a specific location? If yes, specify. If no, write everywhere. | Ekpaideftiki Etairia Rodou  The Valley of Butterflies of Rhodes  Archaggelos village |
| Characters: | The main character of the game will be the forester. |
| Scenes: | 1. Biology lab of the school. 2. The Valley of Butterflies of Rhodes 3. The Valley of Butterflies of Rhodes 4. The village of Archangelos, where Archangelo’s pony lives. 5. The village of Archangelos |
| Type of work: Individual/ collaboration | Teamwork . Teams of 4 students. Players will be the following:  1) tablet operator  2) team leader-coordinator  3) map manager  4) team calendar manager  The roles will be rotated in each mission to achieve a fair distribution and everyone will play the role of biologist / scientist. |
| Does the game involve different player roles? If yes, specify. | No |

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| PART 4: Description of the learning scenario activities | | |
|  | **Learning settings** | **Estimated time** |
| Before the game: | 1) Implementation of students' acquaintance with the main hero (forester)  2) Clarification of terminology that will be used in the game  3) Delivery of equipment (map, tablets & instructions for use)  4) Introduction to the AR program | 30 minutes |
| During the game: | 1. The mystery game starts in **the biology lab** of the school of the young scientists / players. There, the teacher gives the students the first information / data about the game process and the electronic map that they must follow in order to reach the solution of the mystery and give answers to the final questions that will be given to them. 2. In the second scene of the game, the students will be transported to the butterfly valley of Rhodes where they will have to solve the mystery behind the disappearance of the butterflies and the Gizani. Valuable help in this search will be the interview (about butterflies) which they are supposed to get from the park officials. In addition, in order to carry out their research around Gizani, they will have to look for cause cards that will be hidden in various parts of the park. These cards will contain elements from websites and videos, which they will have to put together, using their critical thinking in order to unravel the mystery. 3. The third scene will take place again in the Valley of the Butterflies. In this scene, the issue that will concern them is the Rhodian foul (Roditiko fouli) and the peony (Paionia) that are some of the endemic plants of the island, which are endangered by various factors that students should look for and suggest solutions to solve them. In this scene they are confronted with coded messages and puzzles that they have to solve in order to find combinations that will open locks with important elements and information that clarify the landscape of their exploration. 4. The fourth scene takes place in the village of Archangelos, where Archangelo’s pony lives. There, with the help of data from recorded messages, comics that need to be found and put together (like a puzzle) and suspects&#39; fingerprints, they will get information about the pony and the Dama-Dama deer in relation to the problems they face and the mystery behind their mysterious disappearance but also the noticeable reduction of their population. 5. In the same place as the previous scene, the fifth scene will take place, in which they will have to solve the mystery hidden behind Hibiscus and the wild arbor (Agriokoumaria), two other endemic plants of the island. To solve the mystery behind them, they will have to correspond with agents who specialize in the study of endemic plants. Through the correspondence, students should think themselves the questions they will ask the scientists as well as the concerns they want to share with them, and which will help them solve the mystery. The contribution of puzzles through which they will find additional information for their study and research will also be useful. | 60 minutes |
| After the game: | 1) Evaluation with Quiz  2) Presentation of information in different ways each group (eg with comics, with dramatization, with video, with collage, with book, etc.)  3) Creating a final video with a review of the exploration and the actions that took place as well as the thoughts and feelings of the students and information on the progress of the goals | 30 minutes |
|  | **Total**: | 120 minutes |

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| PART 5: Prerequisite knowledge and supportive material | |
| Learners’ prerequisite knowledge: | Students should be familiar with the terminology that will be used (eg flora, fauna, endemicity, etc.). They should also know how to handle the tablets as well as the AR program that will be utilized. |
| Infrastructure/ equipment needed for implementing the scenario: | 7 tablets  1 PC  1 projector  group calendars  triggers  bus to transport children to various places |
| Other learning resources needed: | <https://www.youtube.com/watch?v=2g4K1vs5Xd0>  <https://youtu.be/kXqVRD3KDcU> |

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| PART 6: Approach towards the assessment of the learning outcomes | |
| Learners’ assessment approach: | ✓ Create video  ✓ Quizzes  ✓ Questionnaire  ✓ Feedback from students |