**Learning scenario with MARG - Template**

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| **PART 1: General information**  |
| **Title of the scenario:** | Water in Assen |
| **Keywords:** | Water, water management, three-step strategy, hydrological cycle, |
| **Name(s) of the scenario’s creator(s):** | Annemarie Doddema, Annelies Klaassen, Cristian Wessels |
| Creative Commons License **of the scenario:** | [ ] Attribution | [ ] Attribution-NoDerivs |
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| **Estimated duration of the scenario’s activities:** | 2 hours  |
| **Age range of learners:** | Lower and upper secondary education (HAVO / VWO) |
| **Learners’ special characteristics: (i.e. immigrants, special needs)** | - |
| **Learning subject based on your curriculum to which the scenario relates:** | Lower years: education goal: Students can articulate which measures are being taken regarding water management.Upper years: module: Living in the Netherlands (Wonen in Nederland, hoofdstuk 1 en 2) Chapters about water management in the Netherlands e.g. the three step strategy |
| **To which Sustainable Development Goal (s) does the scenario relate to : (highlight it/them)** | [ ] No Poverty | [X] 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 | [X] Climate Action |
| [X] 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)** | [ ] 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:* How water management works on a municipal and provincial level from the perspective of the physico-geographical, economical and political dimension.
* What purpose waterways and other waters have for urban areas.
* What effect climate change has on urban areas.
* How does the three-step-strategy contribute to a sustainable handling of water in urban areas.
* How the way we handle water has changed this last century.
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| **In terms of skills** | The learner is able to:* Navigate, using a map, to a location linked to water in some way.

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| **In terms of competences** | The learner:* Can recognize concepts and measures regarding water management and the three-step-strategy in his or her own environment.

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| **PART 3: Description of the game** |
| **Narrative description of the game plot:** | The students will visit 8 places in Assen in the Netherlands which they can find using the integrated map in the app. They can visit these places in no particular order. This way the student can decide on their ideal route. Although this can also be decided for them. When students are on location physically they will be able to acces the content. This consists of text combined with pictures, maps and video’s. They are meant to look around on location in order to answer the location related questions. This will be multiple choice questions. Answering the questions will gain them points (water droplets). The last location they are to visit is the neighborhood Kloosterveen. Here they have to, in groups of 4, devise a plan for a location with an additional water storage area around the neighborhood. The group with the best idea gains 5 points each to their score.  |
| **Game objectives:** | The students start with 0 points. Every correct answer to the question makes them gain 2 points. Every wrong answer results to a loss of 1 point. It is possible that gives them a negative point total. Questions have to be answered until they have the right one. The student with the highest point total wins.  |
| **Does the scenario refer to a specific location? If yes, specify. If no, write everywhere.** | Yes, 8 different locations in Assen (see below) |
| **Characters:** | - |
| **Scenes:** | 1. Parking spot Quintus (hold three-step strategy)
2. RWZI Assen (sewage treatment plant)
3. Oude Haven (economic function water)
4. Loonerdiepje (stream difference between Deurzerdiep and Loonerdiep, canalisation)
5. Anreeperdiep (three-step mountain strategy)
6. Baggelhuizer Plas (recreation function water, Topo trip, old sand excavation, military training area)
7. Kloosterbrug (three-stage disposal strategy)
8. Water management Kloosterveen (three-step strategy, devising and designing a water storage area around the neighborhood in groups. What expected effect it will have. This form can be handed in to the teacher on location, who can then immediately decide which group has won and who will receive the extra points.
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| **Type of work: Individual/ collaboration** | Individual and group collaboration |
| **Does the game involve different player roles? If yes, specify.** |  |

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| **PART 4: Description of the learning scenario activities** |
|  | **Learning settings** | **Estimated time** |
| **Before the game:** | Preparation in the classroom (explanation about water management and the three-step strategy). The explanation can be in form of playing a YouTube video on water management and/or the three-step strategy in the Netherlands, followed by a quick reflection among the students on the video. Furthermore, the game objectives are introduced to the students in a written or an oral format. Students are instructed to download the app on their phone and play the game.  | 30’ |
| **During the game:** | Visit locations and answer questions | 120’ |
| **After the game:** | Working out group assignment Kloosterveen on location | 20’ |
|  | **Total**: | 170’ |

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| **PART 5: Prerequisite knowledge and supportive material** |
| **Learners’ prerequisite knowledge:** | Water management, three-step strategy |
| **Infrastructure/ equipment needed for implementing the scenario:** | App on phone, possibly method book ‘De Geo’ |
| **Other learning resources needed:** | - |

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| **PART 6: Approach towards the assessment of the learning outcomes** |
| **Learners’ assessment approach:** | Though one way of assessment is comparing the final points the students have received after passing the in-game quizzes. Additionally, a wrap up quiz in an informal setup (oral or a pubquiz) could also give a good estimation of whether the students have met the learning objectives of the game. |