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| **Title** | **Module 2 WATER AS A RESOURCE** |
| **Aims** | 1. Be aware of water as a scarce resource in our lives (in family, work, and leisure settings). 2. Frame everyday situations (rain, the water bill,…) in scientific terms, and measure and interpret the results individually and in groups and to contribute to a sustainable management of this resource. 3. Be familiar with the different uses of water in domestic, agricultural and farming, industrial, and recreational settings, and understand their importance. |
| **Key competences.** | **With this module our students will develop the following competences:**   1. **Linguistic competence**: researching and understanding the information, knowing how to discuss it, and reaching agreements and communicating it. 2. **Mathematical competence**, using mathematical tools to measure and know things with precision and solve problems. 3. **Competence in knowledge and interaction with the physical world**, discovering our relationship and our dependence on the water in our environment. 4. **Competence in the treatment of information and digital competence**, using Internet, pc, smartphones, etc. in the search of and the treatment of information. 5. **Social and citizenship competence**, working in groups in search of agreements. 6. **Cultural and artistic competence**, taking photographs, choosing songs and poems, drawing, etc. 7. **Competence in learning to learn**, encouraging us to enjoy the very process of learning and taking advantage of your previous knowledge of the unit. 8. **Competence for autonomy and personal initiative,** empowering the critical spirit in order to confront the theme of water and search for responsible solutions. |
| **Approx. time** | 5 sessions |
| **Methods** | We will follow different methods.  We start with an initial test to discover previous knowledge of the unit so as to value and reflect upon it, taking it as a starting point.  We will use practical methodology based on tasks and projects, separated in two levels of age and different subjects, so that the module will be interdisciplinary and can be adapted to each school. |
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| **Age** | Range: 12-16. |
| **Description** | SESSION 1.  Initial Evaluation. TEST. ANNEX 1.  SESSIONS 2-4  TASKS. ANNEX 2 /ANNEX 3 |
| **Assessment** | SESSION 5.  ANNEX 4. QUESTIONNAIRE. HOT POTATOES. |
| **Necessary material** | PC, Projector, smartphone / tablet with access to Internet, camera, board, pens, coloured pencils, etc |
| **Remarks** |  |
| **WEB LINKS** | <http://news.bbc.co.uk/2/hi/in_depth/629/629/5086298.stm>  <www.esferic.com>  [file:///C:/Users/carlo/AppData/Local/Temp/Rar$EXa7940.42008/hotpotatoes/WATEREVALUATION.htm](C://Users/carlo/AppData/Local/Temp/Rar$EXa7940.42008/hotpotatoes/WATEREVALUATION.htm) |

**ANNEX 1. INITIAL TEST.**

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| ACTIVITIES | SUBJECT / AREA | LEVEL /AGE |
| GROUP WORK. DISCUSS AND ANSWER QUESTIONS:  1. What fraction of planet Earth is water? And our bodies?  2. Do you know where Earth’s largest deposits of fresh water are?  3. What is the most abundant type of water found in your surrounding area?  4. Are you currently aware of any problems concerning water? List them.  5. Do you know what the water cycle is? Explain it.  6. Do you know what the chemical composition of water is?  7. Do you know how rain is measured? Explain.  8. When is more water used in your house, in winter or in summer? When does it rain more in your town, in winter or in summer? Think about it.  9. Do you know any system for saving water? What measures would you take? List them.  10. Do you think water can produce energy? What would this energy be called? | ENGLISH  (LANGUAGES) | 1-4  (12-16) |

**ANNEX 2. TASKS.**

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| ACTIVITIES | SUBJECT / AREA | LEVEL /AGE |
| 1. Make an interactive board about the water cycle. | NATURAL SCIENCE ART | 1 (12-13) |
| 1. Search for songs that have to do with water (in English or in your own language.) | ENGLISH / LANGUAGES | 2 (13-14) |
| 1. Take photos with your camera or mobile phone with the central theme of water and upload them to the platform etwinning with a brief description of one line. | TECHNOLOGY | 3 (14-15) |
| 1. Think of slogans to make people aware of using water wisely. | ENGLISH / LANGUAGES | 3 (14-15) |
| 1. Find on the internet which are the most abundant water resources in your region. | SOCIAL SCIENCE | 3 (14-15) |
| 1. We are going to use a fluviometer and learn to measure the amount of rainfall in our area over a two-month period. We will note these amounts daily in our spreadsheets (excel, etc) | TECHNOLOGY MATHS | 3 (14-15) |
| 1. Search for and write poems (cultural or popular) and rap songs that have to do with water and upload them to the platform etwinning. The best ones will be displayed with the photos. | ENGLISH / LANGUAGES | 4 (15-16) |
| 1. Plant vegetables (and if possible some trees) that grow in our area and install a drip irrigation system in your garden. | P.E. / TECHNOLOGY | ALL |

**ANNEX 3. TASKS. WATER AT HOME**

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| ACTIVITIES | SUBJECT / AREA | LEVEL /AGE |
| 1. Think of actions that we can do every day at home to save water. | ENGLISH  (LANGUAGES) | 1 (12-13) |
| 1. Measure the amount of water you use at home with the “calculator” you will find in this link:   <http://news.bbc.co.uk/2/hi/in_depth/629/629/5086298.stm>  Save your results and email them to your teacher. | MATHS | ALL |
| 1. Maths problems. (i.e.: how much water do we save by turning off the tap while we put on soap when we shower, while we brush our teeth, while we wash dishes, etc). The problems will be formulated by maths teacher after students give details of how much water they use at home (task 2). | MATHS | 1 (12-13) |
| 1. We will interpret a water bill. Then, we’ll check if the amount of water spent per person in a house is equal to, more than, or less than the amount of rain that we’ve measured in the fluviometer. | MATHS | 3 (14-15) |
| 1. Product: make (or buy) a #waterbag in order to save 3-5 litres of water every time we shower (see model at www.esferic.com) | TECHNOLOGY | ALL |

**ANNEX 4. QUESTIONNAIRE. HOT POTATOES.**

To access the Questionnaire and get feedback to your answers, click on this link:

[file:///C:/Users/carlo/AppData/Local/Temp/Rar$EXa7940.42008/hotpotatoes/WATEREVALUATION.htm](C://Users/carlo/AppData/Local/Temp/Rar$EXa7940.42008/hotpotatoes/WATEREVALUATION.htm)

1. When is the best time of day to water the plants in your garden?
   1. Early morning or late evening.
   2. In the midday or in the afternoon. The sun is good for plants!
   3. The time of the day is not important if you water them.
2. How much water could you save by washing your bike with a bucket and sponge rather than letting the hose run?
   1. 4 litres a minute
   2. 11 litres a minute
   3. 15 litres a minute
   4. 19 litres a minute
3. Which of these ways to wash the car saves the most water?
   1. Wash it in the garden or the street with the garden hose
   2. Drive it into the river
   3. Take it through a car wash that recycles water
4. How much water does a family of four use everyday?
   1. 200 litres
   2. 380 litres
   3. 950 litres
   4. 1500 litres
5. True or false: it isn't important to save water because there is so much on earth (3/4)
   1. True
   2. False
6. Washing the dishes, which may use less water?
   1. Washing dishes under a running tap
   2. Washing dishes in a fully loaded dishwasher
7. True or false keeping the water running when you brush your teeth wastes...
   1. 15-20 litres of water
   2. 8-10 litres of water
8. Which of the following uses less water?
   1. Taking a 5 minutes shower every day
   2. Taking a bath twice a week
9. Which of these everyday objects can be a water-saving tool?
   1. A bucket
   2. A clock
   3. A broom
   4. All of the above
10. Which of these activities wastes the most water per day in the average home?
    1. Long showers
    2. A leaky toilet
    3. Water the plants with the hose
    4. Running the tap while washing dishes