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|  | Atelier for STE(A)M project. |
| Title | AQUA project |
| Content knowledge | Water. Chemical composition. Properties  Importance of water.  The water in the Universe. The water on our planet.  The water that we drink. Parameters of water.  Importance of water. Sustainability. |
| Methodology | PBL. Directed research. Inquiry. |
| Technology | Blog Laboratory technology (water analysis) PC / Internet |
| Duration | 9 Sessions (50 minutes per session) |
| Target group (age, course) | 15-16 years (4th Secondary) |
| Resources | Experimentingwithwater.ExperimentosMEMP. <https://experimentosmemp.wordpress.com/divulgacion-del-proyecto/la-revista/> |
| Learning Objectives, Skills and competencies  ***(aims to be accomplished)*** | That the student knows the properties of water derived from its chemical composition.  That the student understands the importance that water plays in our life and in our society.  Let the student know where and how water is found in the Universe and on our planet.  That the student becomes aware of the impact of human activity on the environment, valuing the importance of taking care of water.  That the student carries out an investigation following the appropriate guidelines.  That the students work cooperatively in the resolution of the proposed activities.  Know how to distinguish the relevant information from the non-relevant one.  Learntolearn. |
| Learner’s Role  Learning space | Teams were made to work cooperatively, defining the following roles: Coordinator: coordinates and encourages team work. It is a reference for work organization and communication with the teacher. Secretary: collects notes on the minutes and prepares reports that must be presented to the teacher. The tasks were defined and distributed among the group's components. We worked in the classroom and in the computer classroom. The students did field activities in the university, analyzing water from different points of Burgos. |
| Description**(of every lesson)**  Scenario Narrative | resentation of the activity to the students. Creation of groups. Initial approach to the problem. Documentation work: search of Internet resources and books. Search for information in online magazines, news, specialized magazines. Information gathering. Creation of a blog to structure the contents:<https://experimentosmemp.wordpress.com>  Investigation of water parameters (citizen science, Fundación Ibercivis kit). Geolocation of the characteristics of water in the city(<https://experimentosmemp.wordpress.com/investigacion/ciencia-ciudadana/>).  Analysis of the water characteristics of different public sources and different rivers(<https://experimentosmemp.wordpress.com/investigacion/en-la-universidad/>); Laboratory of Analytical Chemistry, University of Burgos. Development of dissemination elements: blog, social networks, presentation at scientific fairs. |
| Learning Activities | 1. Explore: a) Look for information on the internet and in books. What is the chemical composition of water? What are its most important physical properties? b) What are the parameters to determine the quality of the water? What is the legislation on drinking water? c) What is the origin of water on Earth? What is the proportion of drinking water? 2. Investigate: a) Make simple experiences that allow observing some of the properties of water. 3. Investigate: a) Analyze some water parameters of your house. b) Analyze the water in different points of Burgos (research at the University). |
| SEN (Reinforcement or ampliation)  Conclusions | Extension / reinforcement activities: What other components could we find in the water? Why can not we drink pure water? Conclusions: students learned content and developed important skills. |
| Improvements | To develop an investigation that allows to evaluate each year the water quality in our city. |
| evaluation/assessment | The objectives of the activity were met. The whole project, references, contents, research results: <https://experimentosmemp.wordpress.com> |

