WATER IN OUR LIVES

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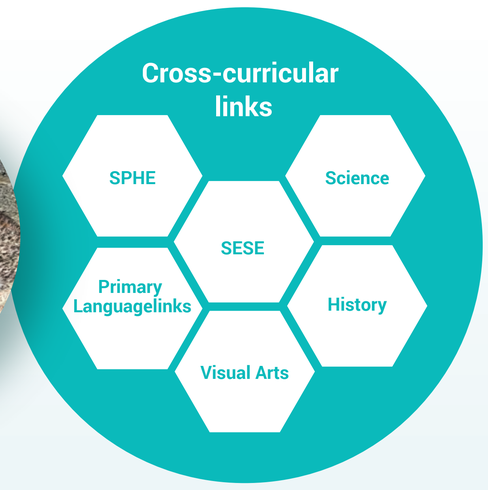
Scoil Íde

1 Background

The OTTER Labs made their debut in March, with primary school students taking part in three workshops revolving around water in in my life. Not only did students become familiar with working in a scientific lab, but they also had the chance to interact with real scientists, enquire about how they might be similar to their role models and explore their own interests in STEAM subjects. The goal of these connections between students and scientists was to create an awareness of the stereotypes surrounding people who do science and emphasize its relevance in our day-to-day lives. Students also engaged in a nature walk to a local famous architectural bridge where they could be surrounded by the many different functions of water around us. Students visited a local historical amenity as well and investigated how they could contribute to the economic and recreational value of the area.



2 Approach

The teachers met with the OTTER team online and in-person for planning meetings. Here, the OTTER representative helped to guide the teachers to possible ideas for OTTER Labs and ways that it could link to the current school curriculum. Possible sites to visit for EOC activities were also discussed and reviewed for relevance to the topics being addressed.

Key Knowledge & Skills addressed

- Clean Water and Sanitation
- Life Below Water
- Creativity and Innovation
- Critical Thinking, Problem Solving, Decision Making
- Communication
- Information Literacy
- Scientific Literacy
- Citizenship
- Life and Career Skills
- Personal and Social Responsibility
- Interacting Considerately
- Creating Awareness
- Acting with Respect

University

Community

Industry

3 The process

This school took on OTTER across all subjects for a complete term of school. This was a huge adaptation, but the teachers felt that the OTTER Learning Objectives were relevant to all of their teaching and could be completely embedded in the curriculum across all of the subjects taught. As a result, the Orientate step was continuously in process. There were particular points of specific input relating to the EOC trips such as:

EOC trip 1 – trip to a University

Teachers pre-taught that there are things in water that we cannot see such as bacteria. They read story books about water.

EOC trip 2 - trip to Local Amenity

Students visited the local outdoor baths and looked at pictures of what it used to be like versus its current state. Students ate their lunches on the steps and drew pictures of the baths. Students heard stories about why there are outdoor baths in the community in the past.

EOC trip 3 - Meeting a Local Historian

Students talked to a local historian from the area who remembers the baths when they were functioning. They heard about the economic and recreational value of the baths. Students took measurements of the baths such as depth, width and length. Students also took water samples from the baths.

In-Class Activities

4 Impact & Lessons Learned

Students created a social media campaign to try and reopen the baths. In groups (2nd class and 6th class students) designed plans for the baths to be renovated and refurbished. They drew diagrams to scale, considered accessibility, designed keys to highlight important features of the baths. Students shared their ideas with the whole group and posted their posters on social media tagging local authorities and county councils. The also tried to recreate an old photograph from the area on a local bridge at the baths that is still standing today.

Core Focus of the EOC Experiences

- Peer-to-peer learning and mentoring
- Collecting Evidence
- Connecting with the Community
- Reducing Plastic Waste

Mini EOC's during the year

Mentoring between the classes – Buddy system

This project has received funding from the European Union's research and innovation programme under grant agreement No 101006482.

LIFE BELOW WATER IN OUR COMMUNITY

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1 Background

A group of 5th year Chemistry students from St. Flannan's College created an OTTER Lab, focusing on Life Below water. Here, they were concerned about the water quality of their local amenity, Ballyalla lake. The students visited Bunlicky Waste Water Treatment plant where they met the Plant Manager from Ward & Burke Group. Here, they were guided through real-life Water and Sewage Treatment plant and introduced to a broad range of career pathways in this field. Students also partnered with Scoil Íde primary school to impart their knowledge of water and sewage treatment as part of their Leaving Certificate Chemistry course on their younger protégés.

2 Approach

The teacher met with the OTTER team online and in-person for planning meetings. Here, the OTTER representative helped to guide the teachers to possible ideas for OTTER Labs and ways that it could link to the current school curriculum. Possible sites to visit for EOC activities were also discussed and reviewed for relevance to the topics being addressed.

Key Knowledge & Skills addressed

- Responsible Consumption and Production
- Life Below Water
- Critical thinking, Problem Solving, Decision Making
- Communication
- Collaboration
- Information Literacy
- ICT literacy
- Scientific Literacy
- Citizenship – local & global
- Life & Career skills

Core Focus of the EOC Experiences

- Peer-to-peer learning and mentoring
- Collecting Evidence
- Connecting with the Community
- Reducing Plastic Waste

3 The process

Discover 1 – Trip to Lake

Here, students identified a local body of water that they could collect water samples to test as part of a mandatory experiment for their State Examinations. Students got a bus to the lake and collected water samples, carried out simple Ph tests and surveys of the resources surrounding the local amenity. Students had free time to walk around the lake and enjoy their lunch break there also. Students collected water samples from the lake and tested pH, nitrate and dissolved oxygen concentrations on site. They tested the Biochemical Oxygen Demand of lake water back in the school lab.

Discover 2a – Visit from Scientist in local industry

Students invited an Environmental Health and Safety Officer to visit their class. This was not possible in-person, so they hosted them online. They were able to understand the importance of water in a pharmaceutical context and how wastewater was managed on site. Afterwards they engaged in a science communication workshop where they finetuned their communication and collaborative skills for their next EOC visit.

Discover 2b – Trip to local primary school

Students were studying water and sewage treatment as part of their secondary school curriculum. For their second visit they created models of these systems and visited a primary school that was also part of the OTTER project. Here, students organised the best way to share scientific information with a younger audience and worked together on a presentation about their topic. Students created models to replicate the stages of water treatment and sewage treatment for primary school students. These models were made from materials found in the school lab and recyclable materials.

Discover 3 – Trip to Wastewater Treatment plant (WWTP)

Students were invited to visit a large Wwtp . Here they could see the real-life application of their study of wastewater and sewage treatment. In particular, students got to see how the measurements in the classrooms are digitalized in industry. Students were also exposed to a day in the life of many careers such as lab technicians, site managers, researchers and technical staff.

4 Impact & Lessons Learned

Here, students analysed their observations and findings from their EOC visits to inform their Youth Initiative. They felt that students were not informed enough about the damage caused when unsuitable waste was flushed in the toilet. They created a poster campaign for their school. As some of the students were also on the student council, they also felt that they could have an influence on their peers and so they helped to promote the campaign.

The three EOC experiences built bridges between theory and real life, between schools and students. Attending the primary school allowed our students to develop personal and social skills. Peer learning helped our students solidify their own knowledge on water treatment.

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