Hold Back the River

In April 2024, the year 7 expedition was called “Hold Back the River”, where we had to answer the guiding question:

“How does water shape our world?”

The expeditionary learning targets were:

- LT1: I can explain how life is dependent on water.
- LT2: I can explain how water shapes physical landscapes.
- LT3: I can explain how the distribution of life is determined by water.
- LT4: I can analyse how life can adapt to the absence and abundance of water.
- LT5: I can describe the impact of human activity on water-based environments.
- LT6: I can explain how water holds significant symbolism in many religions and non-religious world views.

The expedition began with an immersion which used a gallery walk of artistic and factual responses to rivers and seas to build our curiosity and develop background knowledge in poetry analysis by looking at some poems inspired by a storm at sea.

In HUMAN we carried out a gallery walk which looked at various aspects of our relationship with water, and also built background knowledge of some of the UK’s and the world’s major rivers which included using our map skills of locating using compass points. We also analysed two poems about rivers by Valerie Bloom and Brian Patton which started to build skills needed to work with our anchor text, which was an anthology of poems inspired by water.

In science, our immersion took us to Windy Nook nature reserve where we made ecological observations of the richness of our grass, insect, bird and tree populations. We read a National Geographic article about the idea of Keystone species, species that are very important to the structure of an ecosystem in their habitat and watch videos about how oysters, water voles, beavers and seagrass are keystone species in their own habitats.

Case Study 1

Why is water essential for life?

In HUMAN we looked at the relationship human lives have with water. We looked to poetry to see how individuals had been inspired by water. We also studied the symbolism associated with water across the major religions in the world today as well as the symbolic importance of rivers in religion such as the Ganges in the Hindu Dharma religion and the Red Sea in the Abrahamic religions, most significantly Judaism and Christianity with the Old Testament story of Moses. In addition, and as a comparison, we studied and considered how water can hold symbolic significance for the non-religious

world view of Humanists in its role as an essential resource for sustaining life and its ability to reflect important values such as adaptability, interconnectedness, and self-reflection. We also studied how water has been used to secure power, such as in the building of castles by William I during the Norman conquest.

In science we started to understand the interactions plants have with their environment and how their environment supports them. Through this importance of water became apparent, as a habitat and as a resource for living organisms. We looked at the structure of plants and plant cells and how they are adapted to gather the resources needed for photosynthesis, so that a plant can make its own food. This included preparing a specimen slide to observe cells using a light microscope.

In arts we looked at artists that had been inspired by seascapes and analysed how their pieces were informed not just by the sea, but also how they were a product of the movement of art from which they came. We learned about photographic compositional tools that we could use during our fieldwork in a later case study.

Case Study 2

How does water shape the world around a river?

In HUMAN we focussed on river landforms and the processes which give rise to these landforms. analysed poems inspired by rivers, and through fieldwork which focused on the upper and lower stages of the River Tyne. We were able to make connections between these processes and how they create habitats for the species that we studied in STEAM, and why it was therefore important to protect these habitats.

We also saw the devastating effect that flooding can have on people. As well as studying the causes of flooding we were able to look at the environmental, human and economic impact of floods. In order to help us write about this we looked at the formal conventions of article writing and then put this into practice by writing articles about flooding events and their wider causes and effects.

In science we studied the interdependence of life within an ecosystem and applied what we understood about photosynthesis to understand that its products are vital for a balanced and stable environment and ecosystem. We studied how plants are produced and the basis of most feeding relationships on earth and how oxygen and carbon dioxide are exchanged with the atmosphere.

We then studied the interdependence of life in ecosystems paying particular attention to examples in pond habitats.. We studied how organisms are adapted to their role in an ecosystem and to the conditions in which they dwell. We studied the hierarchical structure of an ecosystem: species, population, community and ecosystems and how the make up and distribution within an ecosystem is determined by the biotic and abiotic factors present. The dynamics of a predator prey relationship were studied in relation to the populations of species and how species compete for the resources within their

habitat. This helped us understand the need for individual organisms to be adapted to best compete for these resources.

The reproduction of plants was studied and how the distribution of seeds helped the young plants reduce competition for light, water and nutrients with their bigger more well established parents. This helped us understand the role of another interdependence process- pollination.

In DT we used the properties of photosynthesising trees to our advantage and learned how to work with wood. We built boxes using skills of cutting and fixing wood with butt joints.

We finally looked at the impact humans are having upon the environment and its ecosystem through the effect of damaging food chains through introduction of invasive species, habitat loss and bioaccumulation of toxic pollutants in food chains. We learned what the greenhouse effect is and linked the change in climate to habitat loss and the problem that our species dependent upon our river habitats face because of this.

We worked with experts at the local Wildlife Trust contributing the conservation work of water-based species.

Case Study 3

How does water shape the world around a coast?

Case study 3 saw us further develop our geographical knowledge and apply what we had learned about river processes and landforms to coastal areas.

We applied our knowledge of ecological relationship and interdependence of species to understand the coastal and marine habitats. We again studied how organisms are adapted to their role in an ecosystem and to the conditions in which they dwell. We studied the hierarchical structure of an ecosystem: species, population, community and ecosystems and how the make up and distribution within an ecosystem is determined by the biotic and abiotic factors present.

We finally looked at the impact humans are having upon aquatic environments and its ecosystem through the effect of damaging food chains through introduction of invasive species, habitat loss and bioaccumulation of toxic pollutants in food chains. We learned what the greenhouse effect is and linked the change in climate to habitat loss and the problem that our species dependent upon our river habitats face because of this.

We also used our knowledge of the formal elements of article writing to create the articles that would be our final product, targeted at specific species, their habitats and the importance of conservation of these habitats.

In art we took inspiration from water and the environment. Starting off with environmental issues such as litter and pollution we did some observational drawings of

items often discarded as rubbish. We then moved onto using oil pastels to create large drawings of rocks linking with river formations. Linking with photosynthesis we created prints of leaves and explored printmaking. We then linked back to environmental issues by creating an art work from found objects.

The expedition culminated with a celebration of learning, raising the profile of the importance of conservation of habitats. At this celebration students launched their articles which will be displayed in a Wildlife Trust highlighting their work on conservation and the challenges that human action poses to local water habitats and the species that live there.