YEAR 4 UNIT 2 – RIVERS AND THE WATER CYCLE: How does the water go round and round?

Unit overview

This unit focuses on rivers, providing excellent opportunities for fieldwork and school-based practical work. It introduces the water cycle and, as the key concept is that water flows downhill, looks at mountains, the source of many rivers. It looks at how people interact with rivers as well as their geographical features. A case study features one of the UK's major rivers, the River Thames. Cameos of some of the world's great rivers and mountain environments are included to extend children's geographical general or locational knowledge. There is opportunity to consider a local river or stream, and ideas for using local fieldwork to see the processes introduced in school in action.

The Blue Danube Waltz and Handel's *Water Music* are suggested to accompany geographical river studies, for listening to classical music, to provide a context for classical music, and also to provide a context for dramatizing river features through dance and movement.

Knowledge, skills and concepts

In this unit, the children will:

- name and locate some of the UK's and the world's most significant rivers and mountain environments
- learn about the features of a named river (the River Thames) in the UK, from source to mouth
- learn how rivers and mountains are formed
- identify some of the processes associated with rivers
- understand where rivers and mountains fit into the water cycle.

Background information

The key concept associated with rivers is that, due to gravity, water flows downhill. While flowing downhill, it creates landscape features, flooding, eroding, and moving and depositing materials. The force of energy depends on the flow, which in turn is related to rainfall, drainage pattern, the gradient and the cross-section of the river channel.

Humans exploit rivers for routes, transport, water supply, water power, hydroelectric power, irrigation, religious beliefs, tourism (river cruises), sport and leisure (skiing, hiking). They endeavour to control rivers, diverting the course or enclosing them in open or closed channels as the rivers flow through urban areas, and in areas that are susceptible to flooding. This unit provides the opportunity to considers the features associated with rivers of your choice, where in river systems they are located, and how they are formed.

The water (or hydrological) cycle summarises the continuous circular movement of water above, on and below the Earth's surface. Rivers are an important element in this cycle in which mountains also have a significant place.

Cross-curricular links

- **English:** river and mountain stories and poem, e.g. 'The ascent of Everest' by John Hunt, 'The river' by Valerie Bloom, 'A stream becomes a river' by Margo Fallis, 'The sparkling river' by Susan Perrow (Weeks 1–6); Writing a letter evaluating the unit.
- **Maths:** learning about timing and measurement of water flow (Weeks 1 and 3).
- **Science:** identifying the part played by precipitation, evaporation and condensation, infiltration and percolation, in the water cycle (Weeks 1–2, 5–6); learning about solids and liquids (Weeks 1–2); learning about forces/gravity (Weeks 1–2, 5–6).
- **History:** researching historic river towns and river crossings/bridges (Weeks 3–4).
- **Art & Design:** learning about river paintings e.g. Canaletto's and Monet's paintings of the River Thames and Venice, John Constable's Flatford Mill and paintings of the River Stour (Weeks 3–5).
- **Music:** listening to Strauss's *The Blue Danube Waltz*, Handel's *Water Music* and other classical music related to rivers (Weeks 1–2 and 4).
- **Physical Education:** performing a waltz and other (river-inspired) dances to Strauss (Weeks 1–2).
- **Religious Education:** sacred rivers e.g. the Ganges.

The Big Finish

The children will design and create a model of a stream in the playground, using a range of natural materials to replicate river features they have learned about. They will introduce different materials, change the rate of flow and record the effects. They should use geographical vocabulary associated with rivers, words such as *source, mouth, waterfall, estuary, precipitation, transportation, infiltration, percolation, deposition, tributary* and *confluence*.

Map work

Children will be able to use OS and other (e.g. road) maps to locate and follow rivers. On a fieldtrip to a river environment, children will be able to plan the journey, provide and follow direction instructions, locate themselves on the map and annotate it with their observations. This could provide opportunities for you to model the use of OS maps and to develop 'real world' work on map symbols and grid reference, if this is appropriate for your setting.

Fieldwork

A stream often provides a safer environment for making observations and measurements than a river. You might also provide an opportunity for the children to visit a river flowing through an urban environment to see human use and intervention.

Independent learning area

Children might like to find out more about the major rivers and mountains in the UK and elsewhere in the world, as well as their local rivers (and mountains) that are not included in this unit. They might enjoy researching Snowdon, Scafell Pike or Ben Nevis (the highest mountains in Wales, England and Scotland).

The children might also be fascinated by the various attempts to find the source of a river, and to navigate the world's major rivers, especially the Niger, Amazon, Yangtze and the Nile. They can also find out about the attempts to climb the world's highest mountain – Mount Everest – with the first successful ascent being by the New Zealander Edmund Hillary and the Sherpa Tenzing Norgay in 1953. They might also be amazed to discover that the rocks at the summit of Mount Everest contain marine fossils, which shows that they were formed under the sea. Can the children find out how they got to their present height?

Assessment

All children can:

- name and locate some of the UK's most significant rivers and mountains
- describe a river and a mountain environment in the UK, using appropriate geographical vocabulary
- describe the water cycle in sequence, using appropriate geographical vocabulary
- name (some of) the processes associated with rivers and mountains
- name some of the world's great rivers and mountains.

Most children can:

- name and locate the UK's most significant river and mountain environments
- describe and name the key landscape features of river and mountain environments
- explain the water cycle in appropriate geographical language
- describe (some of) the processes associated with rivers and mountains.
- answer the unit's question: *How does water go round and round?*

Some children can:

- name and locate the UK's and the world's most significant river and mountain environments
- describe river and mountain environments in the UK and the world and explain how (some of) the landscape features associated with them are formed
- explain (some of) the processes associated with rivers and mountains.
- explain the water cycle in some detail, using appropriate geographical vocabulary.