**Key Stage 2 Lesson Plan**

**Introduction:**

Chesterfield’s rivers were once wild, but the industrial revolution tamed the fast-flowing streams to power watermills, transport goods and serve factories. Natural habitats and wildlife suffered, the river was straightened, dammed and toxic pollution all but wiped out aquatic life.

Supported by the National Lottery Heritage Fund, our **‘Hidden Heritage Secret Streams’** project is seeking to reverse these human impacts and restore Chesterfield’s rivers for nature.

The **‘River Guardians’** programme offers pupils the opportunity to learn about the geography, history and habitat of their local river. We will teach pupils that negative impacts can be reversed, and that we all have a part to play in looking after our natural environment.

**Learning Objectives (indoor session):**

* Learn the main features and topography of the river
* Understand how to use on an OS Map to study your local area
* Investigate the effects of run off and infiltration on the river.
* Understand positive and negative effects of human action on the river

**Learning Objectives (outdoor session):**

* Use a classification key to name and identify living things that live in Chesterfield’s rivers.
* Construct a food chain of living things; identifying producers, prey and predators.
* Investigate how the classification of living things can tell us about the health of the river habitat.

 **National Curriculum links:**

* KS2 Science: Living Things & their Habitats, food chains, classification, life-cycles
* KS2 Geography: Location Knowledge – Identify key topographical features including rivers. Study a local OS map and learn how to find a 4 figure grid reference.
* KS2 PSHE & Citizenship: Preparing to play an active role as citizens

**Lesson Plan:**

Session 1 [2 hours] – In school or host venue

1. The session will start with ‘What does a Rivers Trust do’, followed by an introduction to the Don Catchment. The catchment will be explored using the journey of a plastic bottle as an example. A short exercise will be used to demonstrate how the river flows through our landscape and teach terminology.
2. Pupils will locate their school on a map, identifying their nearest river. Pupils will learn and practise four-figure grid references.
3. We will discuss the river and decide if it is natural or made by people. Human impacts to the river will be discussed. Pupils will understand that the river has changed over time.
4. *What happens when it rains?* Pupils will carry out a short experiment in surface run off and infiltration. Science skills include taking measurements, using scientific equipment, making predictions and conclusions. The idea of ‘slowing the flow’ of floods will be introduced.
5. Pupils will learn types of pollution and how we can stop it entering the river. Food chains will be recapped to explain how pollution can harm river wildlife.
6. Pupils will be encouraged to link the ideas discussed in numbers 3, 4 and 5 to ‘Design a river’ for river wildlife. Using puzzle pieces, pupils will work in groups to discuss what makes a healthy river or a bad river, exploring positive and negative human impacts.
7. Building on the idea that negative impacts can be made better, we will discuss how people can help their natural environment. DCRT’s removal of weirs to help salmon return to our rivers will be discussed.

Session 2 [1-2 hours] – on site at local river.

1. Water Safety talk, formal discussion about safety near the river.
2. We will review what was learnt in Session 1, including identifying features found on the river. Pupils will observe and predict whether the river is good for wildlife.
3. *Who Am I?* group activity: Pupils will be assigned a river plant or animal. With help from their group they will find out who they are using a key. After they will get a fact file for their animal to discover more. Extension: Identify producers, prey and predators to make a food chain in your group.
4. Pupils will carry out a river-dipping activity to find and identify freshwater invertebrates that are living in the river. If the local river is accessible DCRT will support pupils to explore and collect a sample. If the river is too deep/steep DCRT staff will bring a river sample to pupils on the bank-side.
5. Pupils will investigate what invertebrates live in their river, identifying and naming them with a name-trail key. Pupils will record what they find and use this evidence to conclude whether they think the river is healthy or not.
6. The session will end with a group discussion about what has been learnt and what pupils think they will do to help look after their environment in the future.
7. We will award a **‘River Guardian’** certificate to the whole class and each pupil will receive a free **‘River Guardian’** pack containing puzzles, activities and gifts.

**Resources:**

To be provided by Don Catchment Rivers Trust:

* Activity sheets and resources
* Bug hunting / river dipping kit
* Hand sanitizer
* High visibility bibs (if not provided by schools)
* **River Guardians** certificate
* **River Guardians** pack

To be provided by pupils:

* Wellingtons and spare, dry cloths