

Introduction to the Water thematic unit

Water shapes our lives, our environment and our society. All living things need water, it is essential for survival. However, while many people locally waste this precious resource, other places in the world receive very little water.

In this unit, children will develop an understanding of the importance of water in our lives and an appreciation of how it affects different societies and economies.

They will also develop an appreciation of the rivers and loughs in Northern Ireland and begin to understand how these important resources can be used by industry. Children will also investigate how our rivers and loughs are under threat from pollution and exploitation.

The unit focuses on the World Around Us learning area and supports the curriculum for Key Stage 2. However, many of the activities involve work across the curriculum, including Language and Literacy, Mathematics and Numeracy and Personal Development and Mutual Understanding. There are also many opportunities to develop children's Thinking Skills and Personal Capabilities.

Unit 1: What is Water?

Introduction

This unit introduces the subject of water and looks at its properties and states. Water in the environment is discussed and the different stages of the water cycle are investigated. Pupils are encouraged to think about their drinking water and where it comes from.

Suggested Learning Intentions

- Changes of state in the water cycle [Science & technology - Change Over Time]

Children will:

- Know what causes the change of water from a liquid to a solid or gas.
- Represent diagrammatically what happens to change water to a solid or a gas.
- Know about the changes of the state of water in the water cycle.
- Be able to use appropriate terms to talk about the water cycle.
- Represent diagrammatically what happens to change water to a solid or a gas.
- Be aware of the processes involved in providing us with drinking water.
- Be aware of the processes involved in cleaning our waste water.
- Know where their local reservoir and water works is.

Water?

Try to think of as many words as possible to describe water.

Did you say words like 'wet' or 'liquid'? Can you think of times when water isn't like this? What happens when you put water in the kettle? What happens when you put water in the freezer? How can water change so much? Why do these changes happen?

Play the following activity to find out why these changes take place:

- BBC KS2 Bitesize – *Science: Materials - Changing States* [Flash Activity]
http://www.bbc.co.uk/schools/ks2bitesize/science/activities/changing_state.shtml

Watch the following clip to find out what happens to the water to make it change shape.

- BBC Learning Zone Clip 1858: *Changes to the state of water* [Flash Video]
<http://www.bbc.co.uk/apps/ifi/learningzone/clips/showrecord?Id=1858>

What do you think happens to the particles in water when it is frozen into ice?

Think of examples in your home where you change the state of water.

Draw a diagram to show what happens when you heat, cool and freeze water. On your diagram show the temperature at which the water changes state. Your diagram should also explain the terms 'evaporation' and 'condensation'.

Where does water come from and where does it go to?

There is the same amount of water in the world now as when the world was first formed. It doesn't stay in the same state for long, it is constantly changing. Look at the clip below to find out about the water cycle.

- BBC Schools *Rivers & Coasts* [Flash Activity]
http://www.bbc.co.uk/schools/riversandcoasts/water_cycle/rivers/pg_02_flash.shtml
- *BBC Learning Zone Clip 2148* [Flash Video]
<http://www.bbc.co.uk/apps/ifi/learningzone/clips/showrecord?Id=2148>

Write the following words or phrases on separate pieces of paper:

Evaporation; Condensation; Cooling; Clouds; Rain/Snow/Hail; Rivers; Sea; Sun; Convection

Now fold up the pieces of paper and mix them all up. Give the pieces of paper to your partner and ask them to put them in the order in which they happen in the water cycle. Time your partner to see how quickly they come up with the right order. Check their answer with the video clips to see if they are correct.

Do you need to add any other words or phrases to explain the water cycle?

Where Does the Water in our Homes Come From?

Is it a good idea to drink the water from a pond or a lake? What might be in the pond or the lake that would make the water unsafe to drink?

The water that comes in to our homes has to be cleaned before it is safe for us to drink. The water that we use in our homes also has to be cleaned before it goes back into our rivers and seas.

Follow the links below to find out how water is cleaned:

- BBC TANDY: Jobs People Do: Plumber - Water system
http://www.bbc.co.uk/northernireland/forteachers/water/what/ft_cl_water_what_houses.shtml
- BBC Primary Focus: Water- Journey of Water [*Flash audio*]
http://www.bbc.co.uk/northernireland/forteachers/water/what/ft_cl_water_what_houses.shtml
- *Northern Ireland Water- Water Cleaning* [external link: Flash activity]
<http://www.niwater.com/education/>

Find out where the water in your school comes from. Where is the reservoir that supplies your school with water? Where does the water in your school get treated?

Unit 2: Who Needs Water?

Introduction

This section investigates how our bodies and our environment depend on water to function properly. It looks at regions of the world where there is very little water, and the effect on people and animals that live there. Finally children should investigate ways to avoid wasting water.

Suggested Learning Intentions

- Learn about the importance of drinking water for staying healthy [*PDMU: Personal Understanding & Health*]
- Recognise inequality in the world regarding access to water [*PDMU: Mutual Understanding*]
- Plants & Plant growth [*Science & Technology: Interdependence*]
- How some animals have adapted to survive in the desert [*Science & Technology: Interdependence*]
- The effects of a lack of basic resources [*Geography - Place*]
- The effect of extreme weather conditions [*Geography - Movement & Energy*]

Children will:

- Conduct a survey.
- Represent results of survey in an appropriate diagrammatic or pictorial form.
- Interpret and draw conclusions from mathematical data.
- Create a persuasive poster to promote drinking more water.
- Conduct an experiment to see the effects of too little water on growing plants.
- Hypothesise the effects of not giving a group of plants enough water.
- Draw conclusions from measurements and observations taken during the experiment
- Learn about the features of deserts.
- Use their imagination to 'create' an animal that is especially suited to life in the desert.
- Select, compare and evaluate information.

I Need Water!

In class, brainstorm all the things you need every day to survive and be healthy. Write up everyone's ideas on a poster or on the board.

Now watch and listen to the following clips:

- BBC Tandy: Jobs people Do: Plumber - Water Facts [Flash audio]
http://www.bbc.co.uk/northernireland/forteachers/water/needs/ft_cl_water_needs_water.shtml
- BBC Learning Zone Clips 4181 *Water Balance* [Flash Video]
<http://www.bbc.co.uk/apps/ifi/learningzone/clips/showrecord?Id=4181>

Did anyone put 'water' on the list of things you need to survive?

How many glasses of water a day do we need to stay healthy? Conduct a survey in your school to find out how many glasses of water children drink each day. Create a graph to show your findings and display it in the classroom.

- What percentage of children in your survey drink enough water to stay healthy?
- What percentage of the survey do not drink enough water?
- Why do you think some people don't drink enough water?

Drink Water Campaign!

In groups, you will create an advertisement to encourage children to drink more water. The advertisement should include information about why water is good for your body. It should also compare the benefits of drinking water with buying sugary, fizzy drinks. The advertisement can take the form of a poster, a radio advertisement or a presentation.

You can use the following links to help you do research for your advertisement.

- *BBC Health- Nutrition - Water* [article]
http://www.bbc.co.uk/health/healthy_living/nutrition/healthy_water.shtml
- *BBC Health - Dehydration* [article]
<http://www.bbc.co.uk/health/conditions/dehydration1.shtml>

- BBC News Report: Coping with the heat [Real media Video]
http://news.bbc.co.uk/media/video/39367000/rm/39367931_weather06_dried_onard_vi.ram
- Kids Health – *What's the Big Sweat about Dehydration* [external link: article]
http://kidshealth.org/kid/stay_healthy/body/dehydration.html

Present your advertisement to the class and display the class's posters around school.

Plants Need Water

Follow the links below to find out more about plants and water:

- BBC Learning Zone Clip 65: *Why do plants need water?* [Flash Video]
<http://www.bbc.co.uk/apps/ifi/learningzone/clips/showrecord?Id=65>
- BBC KS2 Bitesize: Living Things – Helping Plants Grow Well [Flash Activity]
http://www.bbc.co.uk/schools/ks2bitesize/science/activities/plants_grow.shtml

Experiment

In your class, grow a number of plants or flowers from seed. Read the packet to find out how much light and water the plant needs to grow. Take one group of the plants and follow these directions fully. Take another group of the plants and give them half the amount of water recommended on the packet.

What sort of differences would you expect to see between the two groups as they grow?

Each week as the plants grow, observe and make notes about their appearance. Measure their height and describe their appearance.

Note the differences (if any) between the two groups of plants. What is the average difference in their height? What are the differences in their appearance? What conclusions can you draw from this about plants and water?

When There Isn't Enough Water

Some parts of the world have hardly any rainfall. These regions are called deserts. With very little water, what do you think the landscape in a desert would look like?

Look at the following clip to find out about one of these deserts:

- BBC Learning Zone Clips 3094 - The Sonoran Desert - Introduction [*Flash Video*]
<http://www.bbc.co.uk/apps/ifi/learningzone/clips/showrecord?Id=3094>

List the ways that the plants in the Sonoran Desert survive with very little water.

Not many animals can survive in a place with so little water, but some animals have adapted to be able to live there. Watch the following clip to find out more.

- BBC Learning Zone Clips 52 - How animals survive in the desert [*Flash Video*]

<http://www.bbc.co.uk/apps/ifi/learningzone/clips/showrecord?Id=52>

How are these animals able to survive in the desert?

New Animal Discovered!

You have discovered a new animal during your trip to the desert. You must let the rest of the world know about your discovery by creating a picture of the animal. The picture must show the features that have made this animal able to survive in the heat of the desert with little access to water.

Name this new type of animal and show the picture to your class. Describe all the features and characteristics that have helped this animal live in the desert.

Drought

A drought is a period of very dry weather. In some parts of the world, droughts can last for years. This causes a lot of problems for the people, plants and animals that live in those regions. What sort of problems do you think droughts might cause?

Divide a large sheet of paper into three. At the top of each section write 'Causes', 'Effects' and 'Other Factors'. Read the following news items and discuss them in your group. Fill in each section of the poster. Under the 'Other Factors' title you should list any other things that may be making the drought crisis worse or better (for example, poverty, disease, war).

- BBC News Report: California in Drought Emergency [*Flash Video & article*]
<http://news.bbc.co.uk/1/hi/world/americas/7916218.stm>
- BBC News Report: South Australia Drought Worsens [*Flash audio & article*]
<http://news.bbc.co.uk/1/hi/world/asia-pacific/7499036.stm>
- BBC News Report: UN Warns World in Africa Drought [*article*]
<http://news.bbc.co.uk/1/hi/world/africa/4744812.stm>
- BBC World Service -In Pictures: Drought in Afghanistan [*images*]
http://www.bbc.co.uk/worldservice/specials/1633_afghan_drought/index.shtm

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- BBC News: In Pictures: Drought in Benalla, Australia [*images*]
http://news.bbc.co.uk/1/hi/in_pictures/7588098.stm

In poor countries, the effects of drought can be devastating, and can result in death and disease. Why do you think the effects of drought can be much worse in a poorer country?

Read the following articles and then talk about the ways in which people can survive through drought.

- CBBC Newsround: How We're Surviving the Drought [*article*]
http://news.bbc.co.uk/cbbcnews/hi/newsid_4810000/newsid_4814000/4814016.stm
- Oxfam in Action – Ethiopia Drought [*external link: article*]
http://www.oxfam.org.uk/oxfam_in_action/emergencies/ethiopia_drought.html

Research, using the Internet, organisations that help areas affected by drought. Find out if there is anything we can do to help areas suffering from drought.

Water is Precious

In this unit you have learned about how water is essential for all living things. You have also found out how some parts of the world have very little water. In Northern Ireland we take water for granted, but should we be more careful about how we use it?

Listen to the audio clip:

- TANDY: Jobs People do - Plumber - The Water system
http://www.bbc.co.uk/northernireland/forteachers/water/needs/ft_cl_water_needs_precious.shtml

Why is it not a good idea to waste water, even in a place with lots of rain like Northern Ireland?

Think of as many ways as possible that you can reduce the amount of water you use in your home and in your school. Decide which ideas you think are most likely to work and create a poster to tell other children how they can save water. Ask your teacher or principal if there are any water saving policies in your school at the minute. If not, develop a proposal, using your research from the Internet, for a new school water policy.

The following articles may give you some ideas:

- BBC News: Why the taps are running dry [*article*]
<http://news.bbc.co.uk/1/hi/sci/tech/2943946.stm>
- BBC News: The A – Z of water saving tips [*article*]
<http://news.bbc.co.uk/1/hi/world/2945018.stm>

Unit 3 :Water Power!

Introduction to Water Power

This section looks at both the creative and destructive power of water; by investigating hydro-electrical, tidal and wave power, and looking at causes and effects of flooding and hurricanes. They will create a news report or podcast, describing the causes and effects of flooding.

Suggested Learning Intentions:

- *The uses of energy* (Science & Technology - Movement & Energy)
- *The effect of extreme weather conditions* (Geography - Movement & Energy)
- *The ways people affect/conserves the environment* (Geography - Interdependence)
- *Different writing styles* (Language & Literacy)

Children will:

- Know how electricity can be generated from water.
- Be aware of the advantages and disadvantages of creating electricity from water.
- Understand the concept of 'renewable' energy.
- Prepare and give a short speech in character to support an argument.
- Know about hurricanes, why they happen and the effect they have.
- Know about extreme weather conditions in other parts of the world.
- Read through a range of pieces of text to gain information about hurricanes.
- Create a piece of imaginative writing in a diary style.
- Know about the causes and effects of flooding.
- Know about extreme weather conditions locally.
- Be aware of the concept of climate change and some of its implications for our world.
- Read through a range of pieces of text to gain information about hurricanes.
- Use a variety of media to create a report about flooding.

Using Water to Turn on the Lights

Water is a very powerful resource. Did you know that water can be used to create electricity.

Read the following articles to find out about the different ways of generating electricity from water.

- BBC Weather Centre *Climate Change* [article]
<http://www.bbc.co.uk/climate/adaptation/water.shtml>
- CBBC Newsround: *Water Power* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_2790000/newsid_2794900/2794961.stm
- BBC GCSE Bitesize: *Science: Generating Electricity* [article]
<http://www.bbc.co.uk/schools/gcsebitesize/science/edexcel/electricityworld/generatingelectricityrev3.shtml>
- BBC News: How it works: *Wave Power* [article]
<http://news.bbc.co.uk/1/hi/sci/tech/1032148.stm>

Choose one of the methods of generating electricity from water and create a fact file for the other pupils in your class. The fact file should describe how electricity is generated (using diagrams) and identify where you could get this sort of energy (at the coast, in hills or mountains, in the middle course of a river).

Now look at the following clips and articles and think about the advantages and disadvantages of getting electricity from water:

- BBC Primary Focus: Green Power- Hydro Electric Power
http://www.bbc.co.uk/northernireland/forteachers/water/power/ft_cl_water_power_lights.shtml
- BBC News Report: Tidal Power in Strangford
http://www.bbc.co.uk/northernireland/forteachers/water/power/ft_cl_water_power_lights.shtml
- BBC News: *Tidal Energy System on Full Power* [article]
http://news.bbc.co.uk/1/hi/northern_ireland/7790494.stm
- BBC Primary Focus: *Green Power* Teachers notes and worksheets [PDF]
http://www.bbc.co.uk/northernireland/schools/4_11/pfocus/geography/spring2002/pr04.shtml

Discuss these advantages and disadvantages with the rest of your class. Find out why water power is sometimes called 'renewable energy'. Do you know about other types of energy sources that are not renewable?

Energy Debate

An energy company has decided to build a dam near your local area in order to produce hydro-electrical power. The building of the dam and the flooding it will cause will mean that 200 homes will be destroyed. The energy company will give the people and families affected money and time to move house.

The project will create a source of clean, renewable energy that will power thousands of homes in Northern Ireland. It will also create work for many people in your area. However, the flooding of the valley to create the reservoir will not only affect the families that live there, but also the many animals and birds that live there. The valley that will be flooded is a place of natural beauty that is enjoyed by tourists, walkers and anglers.

In your group, you must create an argument either in for or against the development of the dam. You should take on different roles within your group to show the different sides of the argument

Hurricane!

In the previous section you have found out how energy from water can be harnessed by people for positive effect. Water can also have a very destructive effect on our world when large amounts of it are unleashed in storms or flooding.

Hurricanes are very dangerous storms that have very high winds. Each year, in certain parts of the world, they cause a lot of damage and can even kill. Read through the following articles and find out how the energy from warm water can cause these terrible storms.

- CBBC Newsround *Hurricane Season* [article]
http://news.bbc.co.uk/cbbcnews/hi/specials/2005/hurricane_katrina/default.stm
- BBC News: *Hurricanes – Animated Guide* [Flash Animation]
<http://news.bbc.co.uk/1/hi/sci/tech/7533909.stm>
- BBC Weather: *Hurricane Cycle* [article]
http://www.bbc.co.uk/weather/features/understanding/hurricane_cycle.shtml

In 2005, Hurricane Katrina hit the American city of New Orleans. It was a very strong hurricane and caused a lot of damage to the city. When the force of the wind and waves damaged the levees (banks of earth built around the city to protect it from flooding), most of the city was flooded. Many people had to leave their homes and the city – however some couldn't leave in time and many people died in the storm.

Read the following articles to find out more about Hurricane Katrina:

- CBBC Newsround: *One Girl's Escape Story from Hurricane Katrina* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_4240000/newsid_4247100/4247100.stm
- CBBC Newsround: *Hurricane Katrina In Pictures* [images]
http://news.bbc.co.uk/cbbcnews/hi/newsid_4190000/newsid_4196800/4196890.stm
- CBBC Newsround: *Hurricane Katrina Factfile* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_4210000/newsid_4216200/4216254.stm

Write a diary entry for one day during a hurricane.

Flood!

We may not be affected by hurricanes in Northern Ireland, however, many places have been experienced the destructive effects of water through flooding. Find out more about flooding by reading the following articles and viewing the video clips:

- CBBC Newsround: *Severe Floods in Northern Ireland* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_7560000/newsid_7567400/7567440.stm
- CBBC Newsround: *We've Been Hit By Floods* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_7560000/newsid_7568500/7568530.stm
- CBBC Newsround: *In Pics – Flooding Chaos in Northern Ireland* [images]
http://news.bbc.co.uk/cbbcnews/hi/newsid_7560000/newsid_7566600/7566664.stm
- CBBC Newsround - *What is Flooding* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_1610000/newsid_1613800/1613858.stm
- BBC News: *NI Counts the Cost of Flooding* [Flash Video]
<http://news.bbc.co.uk/1/hi/uk/7566212.stm>

Discuss the effects of flooding on an area. Has anyone in the class been affected by flooding in the past? What was it like?

Scientists tell us that the earth's climate is changing, it is slowly getting warmer. This process is called climate change or global warming. For people in Northern Ireland this is likely to mean more floods in the future. View the following clips and articles and then discuss how we might prevent increased damage from flooding in the future.

- BBC Newline: Climate Changes
http://www.bbc.co.uk/northernireland/forteachers/water/power/ft_cl_water_power_flood.shtml
- *BBC News: Floods Package Mike McKimm* [Flash Video]
http://news.bbc.co.uk/1/hi/northern_ireland/7570704.stm
- *CBBC Newsround: Why worry? Laura looks into climate change* [article]
http://news.bbc.co.uk/cbbcnews/hi/newsid_7370000/newsid_7374000/7374061.stm

- *BBC News: New Gates to control Erne Waters* [article]
http://news.bbc.co.uk/1/hi/northern_ireland/7778690.stm

Flood Report

Heavy rain over the last few days has created flooding in many parts of your local area. Your group will create a news report on the floods. The news report can take the form of a podcast, an internet article or a newspaper or television report.

The report must contain a number of interviews with people who have been affected by the floods. You must also report on the areas that have been flooded and why these areas may be prone to flooding (is it near a river, or does water run off a steep hill in times of heavy rain). The report must also talk about what can be done to prevent further flooding in the future.

Unit 4: Our Loughs and Rivers

Introduction

The loughs and rivers in Northern Ireland are very important. They are home to many types of animals. Many people's jobs depend on our rivers and lakes. In this section you'll find out more about two of Northern Ireland's biggest loughs and the animals and industries that depend on them.

Suggested Learning Intentions

- The main stages in the lifecycle of some living things (*Science & Technology: Interdependence*)
- The Relationship between animals and plants in a habitat (*Science & Technology: Interdependence*)
- Local Habitats (*Geography: Interdependence*)
- Some of the ways people affect conserve the environment (*Geography: Interdependence*)
- How animal or plant behaviour is influenced by seasonal change (*Science & Technology: Change Over Time*)
- Using a range of media; understanding of visual elements (*Art*)

Pupils will:

- Know about the wildlife and industries based around Strangford Lough and Lough Neagh.
- Be aware of the many things that depend on the Lough.
- Use a range of materials to create a collage about life and activity around the Lough.
- Learn about migration patterns of Brent geese, eels and salmon.
- Prepare a presentation with a clear sense of audience and purpose.
- Know about the causes and effects of pollution in our Loughs and rivers.
- Learn to think about the short, medium and long-term consequences of pollution.

Strangford Lough and Lough Neagh

On a map of Northern Ireland find Strangford and Lough Neagh. Use the following clips to make notes about the people, animals, industries and activities that depend on the Loughs.

Lough Neagh:

- BBC Landscapes Unlocked: Ecosystems - Lough Neagh
- BBC TANDY: On Lough Neagh's Shores: The Lough
- BBC TANDY: On Lough Neagh's Shores: Lough Facts
- BBC TANDY: On Lough Neagh's Shores: Sand Extraction
- BBC TANDY: On Lough Neagh's Shores: Oxford Island

http://www.bbc.co.uk/northernireland/forteachers/water/loughs/ft_cl_water_loughs_neagh.shtml

Strangford Lough:

- BBC Landscapes Unlocked: Ecosystems - Strangford Lough
- BBC Primary Focus: Strangford Lough: Habitats [Ft_cl_
- BBC Primary Focus: Strangford Lough: Brent Geese
- BBC Primary Focus: Strangford Lough: Foods & Habitats
- BBC Primary Focus: Strangford Lough: People & Environment

http://www.bbc.co.uk/northernireland/forteachers/water/loughs/ft_cl_water_loughs_neagh.shtml

On a sheet of paper write the differences and similarities between the two loughs.

Choose one of the loughs as a focus. Create a spider diagram with the name of the lough at the centre. Around this, write all the people, jobs and wildlife that depend on the loughs. Then, try to think of the other things that may depend on these people, jobs and/or wildlife. Add these to the diagram.

Create a collage to show the variety of life and activity around the lough you have chosen to research. Use the following site for video clips demonstrating the construction of a mural based upon Strangford Lough.

- BBC Primary Art: [Lough](http://www.bbc.co.uk/northernireland/schools/4_11/primaryart/lough.shtml) [Real Media Video]

Amazing Journeys

Some of the animals that live in and around our loughs and rivers travel a very long way to be here. In this section you are going to find out about three of these animals, Brent geese, salmon and eels. In your group, choose one of these animals to research. Follow the clips below to find out more about the animals.

Brent Geese

- BBC Primary Focus: Strangford Lough: Brent Geese
- BBC TANDY: Strangford Lough: Brent Geese
- BBC TANDY: Strangford Lough: Geese and people
http://www.bbc.co.uk/northernireland/forteachers/water/loughs/ft_cl_water_loughs_journeys.shtml

Eels

- BBC TANDY: Natural Journeys: Eels: Glass eels
- BBC TANDY: Natural Journeys: Eels: Hazards
- BBC TANDY: Natural Journeys: Eels: Lifecycle
http://www.bbc.co.uk/northernireland/forteachers/water/loughs/ft_cl_water_loughs_journeys.shtml
- RSPB – Freshwater Eels [*external link: article*]
<http://www.rspb.org.uk/youth/learn/migration/others/oceans/eels.asp>

Salmon

- BBC Primary Focus: Go with the Flow: Salmon
- BBC TANDY: Natural Journeys: Salmon: Lifecycle
- BBC TANDY: Natural Journeys: Salmon: Migration
http://www.bbc.co.uk/northernireland/forteachers/water/loughs/ft_cl_water_loughs_journeys.shtml
- RSPB – The Salmon's Story [*external link: article*]
<http://www.rspb.org.uk/youth/learn/migration/others/oceans/salmon.asp>

You must create a presentation to tell the other groups in the class about the animal you have researched and their amazing journey. Your presentation must talk about:

- What the animals look like.
- Where they come from.

- How they get here.
- Why do they come here.

Protecting our Loughs and Rivers

In the previous activities in this section, you have found out why our loughs and rivers are so important to us. So we need to care for them to make sure they are a clean and safe place.

Use the following clips to find out about how rivers and loughs can be damaged.

- BBC TANDY: On Lough Neagh's Shores: Pollution
http://www.bbc.co.uk/northernireland/forteachers/water/loughs/ft_cl_water_loughs_protecting.shtml
- BBC News: Testing the Waters [*Flash Video*]
http://news.bbc.co.uk/1/hi/northern_ireland/7474414.stm

Create a 'Consequences' diagram to show all the effects of pollution. You could start your diagram like this – pollution creates growth of algae – algae reduces the amount of oxygen in the water – fish don't get enough oxygen... Continue your diagram to show how one part of the river or lough ecosystem being damaged can effect many other parts. Display your diagram to the rest of the class. For more information see:

- The Guides Network: Water Pollution Guide [*External link: article*]
<http://www.water-pollution.org.uk/>

Unit 5: A River's Story

Introduction

This unit will look at the different sections of the river – upper course, middle course and lower. The children will use poetry, art and music to investigate the features of the different sections of the river.

Throughout the unit, the class will be split into groups, each group will look at one section of the river at a time. By the end of the unit, each group will have looked at all sections.

Suggested Learning Intentions:

- Local habitats: Rivers (Geography: Interdependence)
- Express thoughts, feelings and opinions in imaginative and factual writing (Language & Literacy: Writing)
- Use a range of media. (The Arts: Art & Design)
- Select and use appropriate art technique (The Arts: Art & Design)
- Listen and respond to a piece of classical music and discuss its characteristics. (The Arts: Music)
- Work creatively with sound by creating a musical story (The Arts: Music)

Children will:

- Know about the features of the different sections of a river.
- Use a variety of writing styles to describe the features of the various sections of a river.
- Use ICT to record reports and poems, create a record of a visual display, record music and edit a film
- Illustrate the features of the various sections of a river.
- Create a piece of music about a stage of a river's journey.
- Use imagination to create a film about the different sections of a river.

A River's Journey

The journey of a river can be divided into three sections: upper, middle and lower. Choose one of the sections to research. Look at the clips below for the section of the river you have chosen and make a note of any words that you do not understand.

Upper Course

- BBC Landscapes Unlocked: Rivers- Upper Course

Middle Course

- BBC Landscapes Unlocked: Rivers- Middle Course
- BBC Landscapes Unlocked: Rivers - Meanders

Lower Course

- BBC Landscapes Unlocked: Rivers- Lower Course
- BBC Landscapes Unlocked: Coast: Tourism

http://www.bbc.co.uk/northernireland/forteachers/water/river/ft_cl_water_river_journey.shtml

In class discuss the words that you did not understand and use a dictionary to find out what they mean. Display these words on the board.

Do you know of any local places where you can see an example of a river at this stage in its journey?

Your group must create a report to describe the section of the river you have just researched to the rest of your class. Think about the sort of features you see in that part of the river. Use as many describing words as possible to talk about the speed of the water, the sounds you might hear or what you might see. Agree the script for your report and present it to the rest of the class. Give time for you class mates to ask any questions about your report. Record the report and save the audio file to your computer.

River Haiku

“Haiku” is an old, traditional form of Japanese poetry. Haiku poems consist of three lines. The first and last lines have five syllables and the middle line has seven syllables. The lines don’t usually rhyme. Here’s an example of a Haiku poem to show you the structure:

“I am first with five
Then seven in the middle --
Five again to end.”

You must write a haiku poem about the stage of the river that you have just researched. You can watch the video clips again, re-read your research notes and search the Internet for appropriate images to help inspire your poem.

- BBC Landscapes Unlocked: Rivers- Upper Course
- BBC Landscapes Unlocked: Rivers- Middle Course
- BBC Landscapes Unlocked: Rivers - Meanders
- BBC Landscapes Unlocked: Rivers- Lower Course
- BBC Landscapes Unlocked: Coast: Tourism

http://www.bbc.co.uk/northernireland/forteachers/water/river/ft_cl_water_river_haiku.shtml

When you are finished, share your Haiku poem with the rest of the group and listen to each others’ poems. Discuss what you liked about the poems and what you might change. Allow time to revise your poem if necessary. Record your ‘Haiku’ poem and save the audio file on to your computer.

Picturing a River’s Journey

Watch the clips below about a section of the river that you have not looked at before. Make notes of any of the features that you might see at this stage of the river. You can also use other groups’ notes, report and poems about this part of the river to find out more.

- BBC Landscapes Unlocked: Rivers- Upper Course
- BBC Landscapes Unlocked: Rivers- Middle Course
- BBC Landscapes Unlocked: Rivers - Meanders

- BBC Landscapes Unlocked: Rivers- Lower Course
- BBC Landscapes Unlocked: Coast: Tourism

http://www.bbc.co.uk/northernireland/forteachers/water/river/ft_cl_water_river_picture.shtml

Discuss in your group the sorts of things you would see at this stage of the river.

In your group, create a display about this section of the river. You can draw, or stick on images or textiles that describe the sort of things you might see at this stage of the river's journey. You should include information about the how the river looks at this point, is it fast-flowing and narrow, or broad and slow, does it meander? Include information about the sort of wildlife and landscape that you would see at this stage. What sort of activities might you see around the river (e.g. fishing, sailing)? You may wish to include photographs of rivers in your local area.

Show your group's display to the rest of the class and explain why you chose particular images or drawings to illustrate this stage of the river's journey.

Photograph your display using a digital camera and save on your computer. Make sure you capture any details you think are particularly important.

Listen to a River

Listen to 'The Moldau from Ma Vlast' by Bedrich Smetana. (*NB: It is a good idea to pause 'The Moldau (Vltava)' every few minutes or so, so that children can discuss the different features and characteristics of the music.*)

- Last Fm: The Moldau from Ma Vlast' by Bedrich Smetana [*external link: Flash Audio*]
http://www.last.fm/music/Bedřich+Smetana/_/Ma+Vlast:+The+Moldau

In this piece of classical music the composer wanted to use music to describe the course of the Moldau (also known as the Vltava), a river in the Czech Republic, from source to end.

While you listen to the excerpts of the music, think about what part of the river's journey the music is describing. Discuss with your group why you think this. Does the speed of the music give you a clue, or the type of instruments that are used?

Now choose a section of the river that you have not researched before. Look at the clips below, or use other groups' research and displays to find out the sort of sounds you might hear at this section of the river. Brainstorm a list of these sounds.

- BBC Landscapes Unlocked: Rivers- Upper Course
- BBC Landscapes Unlocked: Rivers- Middle Course
- BBC Landscapes Unlocked: Rivers - Meanders
- BBC Landscapes Unlocked: Rivers- Lower Course
- BBC Landscapes Unlocked: Coast: Tourism

http://www.bbc.co.uk/northernireland/forteachers/water/river/ft_cl_water_river_listen.shtml

In your group, create a piece of music that lasts one minute and 'describes' the section of the river you are looking at. Think about the sort of instruments that you should use. Would the tempo be fast or slow? Would you include any sounds that might be heard at this section of the river (for example, seagulls, water gurgling or rushing, speedboats).

Rehearse your piece of music, think about how you could improve it and ask for advice from your teacher or classmates.

When you are finished, record the piece of music and save the audio file on to a computer.

A River Movie

Your group should now have learned about the three sections of a river's journey and you will have a collection of reports, poems, music and photographs saved to computer that describe the sections of the river.

Using this material, your group will create a film using movie making/editing software on your computer. The film will describe the river's journey from the source to the end.