Cedar. Cherry, Rowan,
Go with the Flow

Literacy Texts - Why water's worth it (NF) and Flotsam (picture book)

Trips to the river in town/Mote Park/Thames Barrier?

Lesson	IPC Learning Goal	NC Coverage	Activities	Resources / Vocabulary / Personal Goals
Entry Point x 2 lessons			River Trip • Boat trip on the Kentish Lady from town to Allington and back • River walk along the Medway OR Watch a documentary about rivers The River Wild, starring Meryl Streep Video 1 https://www.youtube.com/watch?v=fdMmzY7XjFo Video 2 https://www.youtube.com/watch?v=ci-ABWPG7LQ Video 3 https://www.youtube.com/watch?v=BsqKTJtK_vw Watch video 1 – encourage children to make notes. Draw a picture of a river and label its features – mouth, source, etc Watch Video 2 – make notes Look at pictures of real boats and discuss their common design features. Ask the children, what is the best shape for a boat? Introduce the correct vocabulary from the outset – **hull, bow, stern, port, starboard, mast, sail, deck, cabin, rudder, propeller, buoyancy**. Think about weight, too – is it necessary to add 'ballast' to the boats? If so, what could they use? (Plasticine is ideal for this purpose.) Ask the children: is it an advantage to add sails, rudders and propellers? Encourage the children to create the most efficient boat designs that are fit for purpose. Test the boats at various stages of their making in an inflatable paddling pool. Which boat design sails the best? Which is the fastest boat? Which is the most stable in the water? Can the children explain why? Ask the children to take digital photographs of their boats and/or videos of their investigations into their boats' performance. The children can then record their activities by annotating the photographs or adding commentary to the videos. Encourage self- and peer-evaluation of the boats' design. Arrange the completed boats in a harbour or boatyard display in the classroom. You will be returning to them for the exit point at the end of the unit. Watch Video 3 for geographical information.	**hull, bow, stern, port, starboard, mast, sail, deck, cabin, rudder, propeller, buoyancy** **paddling pool/large container** **plasticene** **mouth, source, meander,**
Knowledge Harvest			In groups, ask the children to discuss all the things they can think of to do with rivers, including: Famous rivers – such as the **Nile, Thames, Amazon, Mississippi, Indus, Danube, Rhine, Yangtze** Physical characteristics of rivers – what do they look like? How do they differ from lakes, seas and oceans? Wildlife to be found in and around rivers – **flora and fauna** Environmental surroundings of rivers, and so on	**Nile, Thames, Amazon, Mississippi, Indus, Danube, Rhine, Yangtze** **flora and fauna** **river valleys, rapids, waterfalls, glaciers, floods and dams**.

		Record their ideas in the form of mind maps or spider diagrams and display these in the classroom where they can be clearly seen and referred to as they progress through the unit. Show the children a selection of photographs of rivers and typical river features, for example, **river valleys, rapids, waterfalls, glaciers, floods and dams**. Ask questions about the photographs: Can the children identify what is shown in each photo? What do the children think has caused the features represented? What dangers can result from rivers? Why have people in the past always wanted to live near rivers? What geographical river vocabulary do the children know **(erosion, sediment, deposits, flood plains, river mouth**)? The children can then add to the previous displays, showing all of the information they know about rivers.		**erosion, sediment, deposits, flood plains, river mouth,**
Big Picture		Rivers play a vital role in shaping the geography of our planet, providing nutrients, habitats and transport for people, plants and animals, and also supplying us with energy to power machinery and generate electricity. Rivers really are our most precious resource.		p17 – p18 print for definitions
Geography 1	Be able to collect and record evidence to answer geographical questions	**Use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied.**	Look at many different maps of the world. You can use Google Earth (earth.google.com), printed maps at different scales, and globes. Where are the longest rivers? What can the children see from the maps about where these rivers begin and end? Ask the children to work out which countries some of the world's longest rivers pass through. For example, the River Danube begins in the Black Forest in Germany and passes through many different European countries before reaching the Black Sea. As a class, gather statistics on each river's length, major tributaries, lakes and other significant features, such as dams. Trace the path of a river and observe the surrounding physical landscape and human environment using satellite imagery on Google Earth. 'Fly' over Alaska using Google Earth to trace the paths of glaciers (frozen rivers). Using blank maps of the world, ask the children to draw in the world's great rivers. They should record the journey of each one, beginning at its source and ending at its mouth where the river joins the sea, and label on their maps the sea or ocean that the river finally meets. Ask the children to prepare a spoken commentary, describing the course of their favourite river.	Ipads Blank maps of the world
Geography 2	Be able to use a variety of sources to gather geographical information	**Locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on**	Using maps of the world and the maps created in Geography Task 1 find out what great cities have been built along the banks of the great rivers, e.g. New Orleans on the Mississippi, London on the Thames, Bangladesh on the Ganges, Giza on the Nile. In pairs, the children should research one of these cities. They should think about the city's population, employment, food and other resources, etc Ask the children to mark the cities on their maps. In pairs, they should discuss why people in the past chose to live near rivers. They can draw up a table,	Ipads Table – For/Against living near a river For / Against growth / flooding water / damp

		their environmental regions, key physical and human characteristics, countries, and major cities	showing points in favour and against living near a major river. Ask the children to share their thoughts and ideas with others in the class.	Maps of the world
Geography 3	Know about the geography of the area around the school	**Describe and understand key aspects of:** • **physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle**	TRIP Visit a river close to the school. Remind the children that rivers can be extremely dangerous places and sensible, thoughtful behaviour is required. At the river, ask the children to produce a sketch map of the landscape, showing the height of the river banks, the shape of the river, and the main features of the area around the river. What stage is the river at? Is it the upper, middle or lower stage? Test the speed of the water flow by marking a length on the bank and timing how long a twig or other object takes to float along the measured length. Look at the river flow carefully to see if there are waterfalls, whirlpools, rapids, or other features. Look at the way the river is depositing sediment. For example, water flows more slowly on the inside of bends and deposits sediment there. On the outside of bends, water flows more quickly and erodes the land. Consider any leisure use or other human activity that the river is being used for. Is there any way of crossing the river? Ask the children to sketch it or take photographs. Take sketches, photographs, videos, samples and measurements back to the classroom. Ask the children to build up a profile of the river visited so that they can make comparisons with other rivers as the unit proceeds. IF THIS DOESN'T HAPPEN TAKE PHOTOS OF THE RIVER IN TOWN WHERE CHILDREN WILL RECOGNISE THE RIVER.	Sketch Books PHOTOS OF THE RIVER IF WE CAN'T GET THERE
Geography 4	Be able to use appropriate geographical vocabulary to describe and interpret their surroundings	**Describe and understand key aspects of:** • **human geography, including: types of settlement and land use, economic activity including trade links,**	As a class, study pictures of rivers from different stages of their journey to the sea. Look at photographs in reference books and on the internet. You could type 'Rivers' into the Google Images search box and follow the link to 'Rivers of the World'. Or, follow the course of one of the world's major rivers using Google Earth. Discuss the differences in the shapes of the different rivers and of the land surrounding the rivers. Ask the children: what is the surrounding land used for? Is it used for farming or industry? How could they explain the differences in the rivers and the use of the surrounding land? To demonstrate the path of water through a river, you will need: **Tray** **Thick card** **Some bricks**	**Tray** **Thick card** **Some bricks** **Water** **Food colouring** **Sand** Picture of rivers

		and the distribution of natural resources including energy, food, minerals and water	**Water** **Food colouring** **Sand** 1. Place the card so that one end is on the tray and the other end is propped up against the bricks to make a steep slope. 2. Steadily pour the coloured water down the slope. Ask the children: what route does the water take? 3. Fill the tray with sand and smooth it with a ruler to make sure the surface is level. 4. Reduce the height of the bricks so that the slope is shallow. 5. Steadily pour the water down the tray. What happens this time? The children should now draw and annotate step-by-step diagrams of their investigations into the shapes of rivers, before writing an explanation of what they have discovered, using the appropriate geographical vocabulary.	
Geography 5	Know how the features of particular localities influence the nature of human activities within them	**Describe and understand key aspects of: physical geography, including: climate zones, biomes and vegetation belts, rivers, mountains, volcanoes and earthquakes, and the water cycle human geography, including: types of settlement and land use, economic activity including trade links, and the distribution of natural resources including energy, food, minerals and water**	As a class, use maps and the internet to find out what human activities are carried out in the different parts of a river – upper, middle and lower. Ask… Why is the upper river with its fast-flowing steep valley sides suitable for animal grazing but not for growing crops? Why is the flat valley floor of the middle river a good place for settlements? Why is the fertile floodplain of the lower river good for farming? As a class, talk about how the river slows down and deposits the rocks, gravel and soil it is carrying (sediment). The sediment forms new land called a delta. Look at maps of deltas, e.g. the deltas of Bangladesh where the major rivers Brahmaputra, Ganges and Meghnar meet. Can the children explain why different parts of the river are more suited to different activities? In pairs, choose one important river. They should record what they find out and then share it with the rest of the class. As a class, discuss the features of deltas. You could use Bangladesh as a case study and discuss the implications of living there – how is farming affected, what crops are grown, how do people live, how do they protect their homes from floods, and so on. For example, in the Bangladesh delta, flooding is accepted as a way of life for the local people. They have learned to live with a yearly monsoon and five or six big cyclones each year. The following website provides a useful starting point: rgs.org/NR/rdonlyres/32634944-D055-4B94-9C89-1686645C794D/0/Bangladeshfloods.pdf – the Royal Geographical Society website has this useful PDF for teachers, providing information and photos on the Bangladesh delta, the monsoon, cyclones, and storm shelters.	iPads Maps **Sediment** **Fertile** **Grazing** **Delta** **Monsoon** **Cyclones**

Geography 6	Know how the features of particular localities influence the nature of human activities within them.	**Use fieldwork to observe, measure record and present the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs, and digital technologies**	Ask 'What can cause the rivers to flood, or water levels to rise?' High tides, heavy rainfall or melting snow can cause the water in rivers to rise so that the river banks cannot contain it and flooding of the surrounding land can occur. Human activity, such as cutting down trees and building on flood plains, can also cause flooding. Show the children pictures of flood defences. Look at the different types of flood defences and the materials they are made of, as well as which countries they are used in. For example, the Thames Flood Barrier in London has gates that can be closed if needed to stop the river flooding the city. The following website provides a useful starting point: en.wikipedia.org/wiki/Thames_Barrier – wikipedia has facts, figures and photographs of the Thames Flood Barrier.	Pictures of flood defences
Geography 7	Know about the main physical and human features and environmental issues in particular localities	**Locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on their environmental regions, key physical and human characteristics, countries, and major cities.**	Ask the children to look at a map of the River Nile from its beginning to its end. Draw a map of the river valley, showing the important landmarks, e.g. fertile land, towns, pyramids, mountains and desert. Explain that this kind of map is called a linear map. Although it shows all the features, there is no scale so it does not show true distances. The linear map can then be used as a basis for making a model of the Nile valley, using card, sand, paint, papier-mâché, etc. On thick card, draw the shape of the Nile. Ask small groups of children to work on a section each. They can paint the river, then paint the fertile land around it and make models of the different features of the river's landscape. The children could find out what colours the River Nile and surrounding land are and use the same colours in their models. POSSIBLE HOME LEARNING?	**Linear Map** Card Paper Mache Paints Sand Material - collage
	Know about the main physical and human features and environmental issues in particular localities	**Locate the world's countries, using maps to focus on Europe (including the location of Russia) and North and South America, concentrating on**	EXTENSION In August 2010, after a period of heavy monsoon rainfall, devastating floods covered huge areas of Pakistan along the banks of the River Indus. Approximately 20 million people were affected in the worst flooding the region had experienced for 80 years. Afterwards, many regions struggled to cope, with no proper housing or access to clean water and sanitation. In September 2014, another serious flood swept areas of Pakistan and India. This recent flooding killed 367 people and affected more than 2.5 million people. 129,880 houses were damaged or destroyed and over 1 million acres	

		their environmental regions, key physical and human characteristics, countries, and major cities.	of cropland were affected. A number of international organisations continue to offer aid. Ask the children to research and gather statistics from the internet on the 2010 and/or 2014 Pakistan flooding, to find out the following information: Amount of rainfall per day/per week Areas of the region affected by the flooding Number of people affected Number of homes destroyed Amount and type of aid given Use Google Earth to follow the path of the River Indus from its source in the glacial waters of the Tibetan Plateau down to the Arabian Sea, near the city port of Karachi. Encourage the children to work in groups to write a news report or documentary using the information gathered from their research. Pose the question – was there anything that could have been done to prevent either tragedy? The children should think about the most effective ways of presenting their findings, e.g. by combining the statistical information with photographs, maps and videos.	
Science 1	Know about the principles of condensation and evaporation	**Y4 – recap** **Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.**	Refer to Year 3 and 4 on the water cycle – recap Ask the children if they know why it rains, where the rainwater comes from, and what happens to the rainwater (puddles) when the rain stops. This should just be a brainstorming activity at the moment and you should not tell them if they are correct or not – they will watch your experiment to confirm or disprove their theories and attempt to name the different stages of the water cycle. **OPTIONAL – Or create a PPT to demonstrate** **Teacher activity (boiling water needed)** To make a water cycle, you will need: Some bricks Sheet of glass Plastic tray Boiling water Food colouring Thick white card 1. Arrange the glass so that one end is supported on a pile of bricks and the other end slopes down above the tray. 2. Place the card between the tray and the pile of bricks. The bricks represent mountains, the tray is the sea, the glass is the atmosphere and the card is land. 3. Pour the coloured boiling water into the tray and observe what happens. Vapour from the water should condense on to the glass and fall back on to the card.	**transpiration, evaporation condensation** iPads

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<tr><td></td><td></td><td></td><td>Hand out to small groups of children, pictures of the elements that represent each stage of the water cycle: clouds, sea, sun, rain, etc.
The following websites will provide a useful reference point: enchantedlearning.com/subjects/astronomy/planets/earth/Watercycle.shtml – Enchanted Learning has information and a comprehensive diagram of the water cycle. water.usgs.gov/edu/watercycle-kids.html – the U.S Geological Survey website features a more detailed diagram of the water cycle. There is also an interactive version available.
In their groups, the children should sort the images into the correct order, justifying their choices as they go. Ask them to find out the names of each process of the water cycle (e.g. transpiration, evaporation and condensation) and describe what is happening at each stage.
ICT link: ask the children to draw their own pictures to represent the different stages of the water cycle. They could use a drawing tablet or work on paper first and then scan the images into the computer to create an annotated storyboard or cartoon. Encourage the children to source suitable sound effects and add these to their water cycle – for example, the sound of the rain, wind and waves.</td><td></td></tr>
<tr><td>Science 2</td><td>Be able to conduct scientific investigations posing scientific questions</td><td>Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.</td><td>The children should find out about stalactites and stalagmites using books and the internet. They can compile a spreadsheet sorting the characteristics of each, as well as where they can be found.
The following website will provide a useful starting point: goodearthgraphics.com/virtcave/virtmap.html – the Virtual Cave website has an interactive diagram that children can explore, to access further information about the natural features of a cave network – including stalagmites and stalactites.
Tell the children they are going to grow their own stalactites.
You will need:
Wool
Paperclips
2 jars
Dish
Washing soda crystals
1. Fill both jars with warm water. Stir in soda crystals. Keep adding soda until no more can be dissolved. This is called a saturated solution.
2. Place the jars slightly apart in a very warm place with the dish between them.</td><td>stalactites
stalagmites
<table><tr><td>stalactites</td><td>Found</td><td>stalagmites</td><td>found</td></tr><tr><td></td><td></td><td></td><td></td></tr></table>
iPads
Wool
Paperclips
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Dish
Washing soda crystals</td></tr>
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			3. Fasten a paperclip to each end of the wool and lower one paperclip into each jar so that the wool hangs over the dish. 4. The stalactite will grow in the centre of the wool. Each day, measure how much it grows. Keep a record of your measurements. Why is the stalactite growing? Remind the children what they learned about evaporation in Science Task 1.	
Science 3	Be able to discriminate between evidence and opinion.	**Identifying scientific evidence that has been used to support or refute ideas or arguments.**	OPTIONAL OR CREATE A PPT TO DEMONSTRATE THIS. Give the children one permeable and one impermeable rock. If you don't have access to a variety of rocks you could use chalk and marble. The children should discuss which rocks they think are permeable and which they think are impermeable – don't tell them yet if their guesses are correct. Experiment with water to discover which rocks are permeable and which are impermeable. The children should then discuss the characteristics of each type of rock. Can the children think of things that are made using these materials? Make a list. In small groups, ask the children to investigate how waterfalls are formed – by erosion at places along the river's course where soft rock meets hard rock. Ask them to collect information about the Grand Canyon in North America from reference books and the internet. How was the Grand Canyon formed? What can they find out about the different rocks that make up the Grand Canyon? Are they permeable or impermeable? The following website provides a useful starting point: bobspixels.com/kaibab.org/geology/gc_geol.htm – Grand Canyon Explorer has detailed information, diagrams and photographs about the geology of the Grand Canyon. Ask the children to write up a science report and evaluation detailing their scientific investigations into permeable and impermeable rock. Provide them with a list of headings that will help them structure their report. For example: The purpose of our investigation What we measured How we made our test fair Problems we had and how we solved them	iPads **permeable** **impermeable**

			Our predictions and our results What we learned from our investigation Tell the children they might also want to include detailed and labelled diagrams to support their work.	
Science 4	Be able to conduct scientific investigations posing scientific questions.	**Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.**	**PPT** Explain to the children how rivers at their source contain clean water but as they make their journey to the sea, the water becomes polluted by human activity, for example, from farming and industry. Polluted rivers contain less oxygen so are a threat to the wildlife living in the river. The following websites provide a useful starting point: video.nationalgeographic.com/video/uk_thamesriver – the National Geographic website has this 2-minute video about the history of pollution control on the River Thames, London. (Note: a short advert will run before the start of the video.) resources.woodlands-junior.kent.sch.uk/riverthames/pollution.htm – Woodlands Junior School website provides an overview of how pollution was tackled in the River Thames. Other useful websites about water, the water cycle and the effects of pollution are: water.usgs.gov/edu/watercycle-kids.html – the U.S Geological Survey website features a detailed diagram of the water cycle. There is also an interactive version available. water-pollution.org.uk – the Water Pollution Organisation outlines sources of pollution and how they can be treated. watereducation.org – the Water Education Foundation has information about water resource issues in the USA. Discuss with the children the ways in which water can become polluted, e.g. chemicals from pesticides, rubbish, waste from factories, etc. Our drinking water comes from the water cycle. Water must be filtered and purified before we use it. Ask the children to work in small groups to make a simple water filter. You will need: Sand Water Filter paper Jug Small stones	Resources Sand Water Filter paper Jug Small stones Sieve Funnel 2 containers **source**

			Sieve Funnel 2 containers 1. Mix the sand, stones and water together. 2. Pass the mixture through a sieve. See what is left in the sieve and what has passed through into the container. 3. Put filter paper in the funnel and pour the sandy water from the container through it. 4. The water in the container may look clean but it is not fit to drink. Compare this water with tap water. Remind the children that many people in the world do not have access to clean water. Discuss with the children what the effects of having to use polluted water can be. Can they think of ways to save water in their everyday lives? Some ideas include having showers instead of baths, turning off the tap whilst cleaning your teeth, etc. HOME LEARNING – Poster? **Language Arts link**: ask the children to design a 'Save Water' information leaflet aimed at households in your home and/or host country. They should use persuasive language to talk directly to their audience in a personal and informal way. Ask them to combine the text with coloured graphics to boost their message and create maximum impact.	
Science 5	Know how energy sources occur.	**Using test results to make predictions to set up further comparative and fair tests.**	Ask the children to work in groups to make a simple water wheel. Explain that in the past, water wheels were often used in mills to grind grain into flour, to turn textile looms, or to drive mechanical hammers and bellows. The following instructions explain one way of constructing a water wheel. However, you should challenge the children to design and produce the most effective water wheel that they can by themselves. You will need: Small plastic cylinder Lollipop sticks Glue Stiff card Plastic bottle Piece of dowelling Tray	Resources Small plastic cylinder Lollipop sticks Glue Stiff card Plastic bottle Piece of dowelling Tray Drawing pin Drawing compass **Generator** **Turbine** **Dams** **Energy**

			Drawing pin Drawing compass 1. Glue lollipop sticks around the cylinder to make paddles. 2. Cut a strip of card so that it is long enough to reach underneath the tray and stand up on either side, allowing your paddle wheel to turn. Cut a 'V' shape in the card at either end. 3. Push the dowelling through the paddle wheel so that one end sticks out further than the other. 4. Using the compass, draw a circle on a piece of card. Cut it out and fasten it to the long end of the dowelling with a drawing pin. This is called the flywheel. 5. Use the bottle to carefully pour water on to the paddle wheel. What happens if you alter the height from which you are pouring water? The energy of the falling water turns the paddle wheel which spins the flywheel. The flywheel represents a turbine which drives a generator. Afterwards, ask the children in their groups to use reference books and the internet to research how dams produce energy.	
Science 6	Know the basic principles of renewable and sustainable energy.	**Identifying scientific evidence that has been used to support or refute ideas or arguments.**	Ask the children to use reference books and the internet to research how hydro-electric dams produce energy (refer back to the big picture section). Find out if there is a dam in your home or host country that you can visit or research. Ask the children: can you find out how much power it generates? What are the benefits? What has been the impact on the local environment? Does the site provide for recreation and encourage wildlife? Water is a 'clean, renewable source of energy'. Ask the children to discuss what is meant by 'clean' and 'renewable' in this context. They should compare it with fossil fuels such as coal and oil that have a limited supply and create pollution. Working in pairs, ask the children to design and produce a poster or interactive exhibit explaining how water power works and what the advantages of water power are as a clean, renewable source of energy.	**Hydro-electric**
Science 7	Know about the major classificatio	**Describe the differences in the life cycles of a**	Classification – PPT to demonstrate.	iPads

	ns of living thing.	**mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals.**	In pairs, ask the children to search for information about fresh water rivers as important habitats for wildlife. They should research in books and on the internet. They can research river animals, such as: Fish, e.g. salmon, sticklebacks, eels, roach and pike Amphibians, e.g. frogs and toads Mammals , e.g. beavers, otters, water voles, water shrews and mink Birds, e.g. herons, kingfishers and ducks They can find out about animals living in tropical rivers, such as: Reptiles, e.g. crocodiles, alligators and water snakes Fish, e.g. piranhas Mammals, e.g. river dolphins, manatees and hippos They can research animals found in river estuaries, such as: Fish, e.g. crayfish and crabs Birds, e.g. oystercatchers and avocets Ask the children to select an animal and to research its life cycle, its place in the food chain, and how it is adapted to life in the river. Still in their pairs, ask the children to make lists and study photographs of the different fish, amphibians, birds, mammals and plants that live in and around rivers. Discuss the different ways in which the animals can be classified, e.g. those with webbed feet and those without webbed feet. Ask the children to draw up a classification key to include all the animals. Ask them also to draw up food chains to show the relationship between the different river animals – which are predators and which are prey? The following website provides a useful starting point: ypte.org.uk/factsheets/rivers/life-in-a-lowland-river#section – the Young People's Trust for the Environment has this factsheet about rivers and an example of a river food chain. Encourage the children to make useful notes from their research and to share and discuss their findings with other groups in the class. At the end of the task, the children could create one class database to combine and store all the information they have gathered.	
Science 8	Know the basic principles of renewable and	**Recording data and results of increasing complexity using scientific diagrams and labels,**	EXTENSION OR HOME LEARNING Ask the children to use reference books and the internet to find out about forms of renewable and sustainable energy other than water power, e.g. solar energy and wind power. What are the advantages and disadvantages of each one?	

	sustainable energy.	**classification keys, tables, scatter graphs, bar and line graphs.**	Ask the children, in groups, to make short presentations of their findings to the class. If you wish, they could also add the information to their posters or interactive exhibits from Science Task.	
Technology 1	Be able to work with a variety of tools and materials with .some accuracy	**Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.**	Tell the children that people have always settled on the banks of rivers and have, therefore, needed to find ways of crossing rivers. Collect a selection of pictures of different bridges from the most simple to the very complicated. The following website provides a useful starting point: pghbridges.com/basics.htm – PGH bridges provides a handy spotter's guide to different bridge types, with helpful illustrations. Discuss the specific purpose of each bridge, e.g. for people only, for heavy-goods, for vehicles? Think about how it was built and what things the builders had to consider, e.g. the width of the river and the weight the bridge had to carry. Ask the children: why are certain places on the river bank more suitable for bridge-building than others? Ask children to work in pairs to build a small-scale bridge model. Give them basic specifications, such as the width of the river and the weight the bridge must hold, as well as the purpose of the bridge (this will help with planning the width of the bridge). The children must produce a working portfolio as they proceed showing the following: An artist's impression of their bridge A plan of the bridge with measurements, i.e. the width, distance from each bank, number of supports, etc. A list of materials to be used for each part of the bridge The equipment required for each part of the bridge A list of the activities in order showing how they will construct the bridge After they have built the model bridges, put them all on show and test the bridges with the agreed weights. The children should then discuss solutions for bridges that do not match the specification, i.e. don't hold the weight. The children can vote for the most successful bridge and the most pleasing design.	Different material to construct with Lolly sticks Twigs Stones String

Technology 2	Understand the ways in which technology can be used to meet needs, wants and opportunities.	**Understand how key events and individuals in design and technology have helped shape the world.**	Ask the children to think about all the different ways in which rivers might be crossed or navigated in their host or home countries. They can use reference materials, books and the internet. They should think about: rafts, rowing boats, steam boats, barges, yachts, canoes, speedboats, ferries, hovercraft, aircraft, etc. In small groups, ask the children to draw up a list of points in favour or against each different way of crossing or navigating a river. Which methods of navigation are more suited to recreational use? Which are suited to industrial use? Which can be used for either use? Ask the children to produce their results in the form of a table, a Venn diagram or a short presentation to the class. **EXTENSION/HOME LEARNING** Using Google Earth, take the children on a 'Bridges 3D Tour'. With Google Earth open, download and/or click on the following file: earth.google.com/gallery/kmz/bridges-3d-tour.kmz – Google Earth hosts this downloadable file, which will add the Bridges 3D tour to your version of Google Earth. This will add the Bridges 3D tour to the left-hand 'Places' window. You can then click on the links to zoom into the 3D globe to view each bridge. (Ensure that you have the 3D Buildings option checked.) You can then view the ten 3D-modelled bridges on the tour, including the stone arch Ponte Vecchio Bridge in Florence, Italy; the Triborough (suspension) Bridge and the Henry Hudson steel arch bridge in New York City, USA. Ask the children to identify the different types of bridges on the tour. They can then carry out some independent research, using books or the internet, into the design and building of one of the bridges. Ask them to try to find out: For what main purpose the bridge was designed What materials were used in making the bridge How long it took to construct and much it cost to make What was the impact of building the bridge (consider travel, transport of goods, accessibility, jobs, the surrounding environment, tourism, etc.) The children could then work together to create their own 'bridges tour' exhibition or interactive presentation using software such as such as PowerPoint (products.office.com), Prezi (prezi.com) or Photo Story (microsoft-photo-story.en.softonic.com).	

History 1	Be able to find out about aspects of the past from a range of sources	**Gain historical perspective by placing their growing knowledge into different contexts, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.**	Could this be the River Medway instead? The country of Egypt owes its existence to the River Nile. In ancient times, the annual river flood was extremely important for the prosperity of the country. Remind children of the geography activity when they made a linear map of the Nile. Some of the features on their maps come from the period in history when Egypt was a great empire. Ask the children to work in pairs to find out about the importance of the river and its place in the life of ancient Egypt. Ask the children a number of key questions to which they need to find answers, for example: How was the Nile flood measured? What ceremonies were carried out to ensure the successful flooding of the Nile? What role did the Pharaoh play? How was the water diverted into the fields? How was the Nile used for transport of people and goods? What other activities took place on the river, e.g. fishing? Some useful online resources include: resources.woodlands-junior.kent.sch.uk/homework/egypt/nile.htm – the Woodlands Junior School website is an award-winning resource, providing excellent information on a number of historical periods, including Ancient Egypt. ducksters.com/history/ancient_egypt.php – Ducksters is a web resource for children, offering facts and images tosupport a study of Ancient Egypt. bbc.co.uk/education/clips/z3rwmp – BBC Learning Zone documentary focusing on the importance of the Nile to the Ancient Egyptians. kidspast.com/world-history/0029-nile-river-valley.php – the Kidspast website provides photographs and information about the history of the River Nile. (Note: this site does feature advertising.) Ask the children, working in pairs, to present their findings in the form of a newspaper article with accounts and pictures of what they have found out. They should include a timeline as part of their article, detailing at what time each of these things happened. How have things changed over the years? What else was going on at these times? Were there any conflicts that might have affected the role the river played in Egyptian life? How have the crops grown over the years changed?	**River Nile** **Egypt** iPads

History 2	Be able to select and record information relevant to an historical topic.	**Gain historical perspective by placing their growing knowledge into different contexts, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.**	**EXTENSION/HOME LEARNING** Look at a map of North America and find the course of the Mississippi river. In small groups, ask the children to find out all they can about the part the Mississippi played in the development of the southern states of America. The following websites are a useful starting point: en.wikipedia.org/wiki/Mississippi River – Wikipedia provides facts and figures about the Mississippi River. oddizzi.com/teachers/explore-the-world/physical-features/rivers/worldrivers/mississippi – Oddizzi provides a fact sheet and overview of the history and features of the Mississippi River. Ask them to consider the following: What goods were transported along the Mississippi? What major ports grew up along the river? They can give a short talk or presentation to the class about what they have found out.	**Mississippi**
Society	Understand that the behaviour of individuals has an effect on the lives of others		Working in groups, tell the children that a river is to be dammed. Give each group a role, e.g. villagers who live in the river valley; city people who want a cheaper, more reliable electricity supply; government officials who have decided to build the dam; conservationists who are concerned for the environment. They should research the advantages and disadvantages of damming the river for their particular group of people. The following website will provide a useful starting point: internationalrivers.org – International Rivers is an organisation that seeks to protect rivers and the local communities who depend on them. You could base the children's studies in a real context by asking them to research the building of the controversial Three Gorges Dam in China, on the River Yangtze, one of the longest rivers in the world. Find out about the effects on the surrounding areas, including the town of Yichang, on businesses, industry, archaeology, wildlife and local people (1.4 million people needed new homes). Ask the children to find out why the Chinese government decided to build the dam. What were the intended long-term benefits?	

			Ask the children to prepare their arguments either for or against the building of the dam depending on which group they have been allocated, considering both the advantages and disadvantages. Then set up a debate with short speeches and question sessions.	
International	Be able to identify ways in which people work together for mutual benefit		The children should research the effects river management in one country might have on the water supply of another country through which the river flows. Use examples such as the damming of the River Nile at Aswan. They should consider the following areas: Water pollution and filtering systems Hydro-electric power How many countries the river passes through and at which point on the river the management occurs. What are the implications for countries up-river and down-river? Flooding The children should discuss their findings as a class and compare the information to what they know about the home and host countries.	iPads
International	Know about similarities and differences between the lives of people in different countries.		**EXTENSION/HOME LEARNING** Ask the children to find out about the work of the international charity, WaterAid. Guide their research with leading questions, for example: What does Water Aid do? Where does it work? Can we (our school or our community) help? The WaterAid website provides an ideal starting point: wateraid.org/uk/audience/schools – WaterAid is an international organisation that aims to improve water access, sanitation and hygiene for the poorest people. The schools section offers lesson plans, resources, fact files and videos. Ask the children, in small groups or pairs, to use the information they have collected through their research to write a non-chronological report and/or a persuasive poster supporting the work of the charity, Water Aid. **Language Arts link:** discuss with the children the best way of structuring their report writing, for example, through the use of clear layout, formal language and section headings. Persuasive text, on the other hand, might be better presented through bullet points, personal language (using the pronoun 'you'), coloured graphics illustrations and visuals.	

Exit Point			Tell the children that you are going to have a boat race down a river. A regatta! And the children are (individually, in pairs or in groups) going to enter a boat to enter in the race! Together with the class, look at a large-scale local map and, using your local knowledge, find a suitable stream or shallow river on which you plan to race your boats. **Note: It is vital that you consult your school's health and safety policy and ensure that a detailed and sufficient risk assessment is carried out.** Think about the conditions on the river and how this will affect the performance of the boats. What stage is the river at? Is the water fast- or slow-flowing? Is the bed of the river rocky or smooth? Do the boats need to be sturdy and robust? Ask the children to look at the boats they made at the entry point and make adjustments to their designs based on what they have learned about rivers from this unit. When the children are satisfied with their completed boats, publicise the event with eye-catching posters, banners and invitations to the regatta. Invite all parents who are interested to help out on the day. You could encourage everyone to dress up for the event by wearing straw boaters or sou'westers, sailors' or pirates' fancy dress. Don't underestimate the amount of planning and help that will be required. Let the children get involved in the detail and decision-making as much as possible. They should be encouraged to appoint a class regatta committee to ensure that: Health and safety procedures are followed on the day Suitable waterproof clothing and footwear is worn Children are supervised by adults at all times Litter is not left in the river after the event They should make lists of 'things to do' and 'useful things to take', e.g. long-handled nets for scooping up river-wrecked and capsized boats. On the day of the regatta, get the children to video the proceedings and add a spoken commentary, with some of them acting as news reporters. Have a riverside award ceremony and interview the winner. Don't forget to take close-up shots of the winning boat for the school website or newsletter. Finally, when you return to the classroom at the end of the race, make sure you toast the end of this unit with a celebratory glass of refreshing drinking water - don't miss the opportunity to remind the children that they are drinking what was once river water.	Trip to Mote Park/River Letters to parents

			While enjoying your glass of water, take time to reflect on what you have learned about rivers during the course of this unit – encourage the children to share their knowledge and understanding about rivers with a partner and with others in the class. You are all bound to agree on one thing about rivers … we need to go with the flow!	
Reflection				