

KS2 Example Work Unit

Canals & Rivers



canalrivertrust.org.uk/explorers

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Planning Grid

KS2 Themes

- **Water in the Environment**
- **Transport (Canals & Rivers)**
- **The Natural World**
- **Art & Design**

Key Questions

- **What** are the differences between canals, rivers and ponds?
- **Why** are canals significant for the UK and the world?
- **Where** do our waterways go?
- **What** lives in and around our canals, rivers and ponds? How does this change throughout the year?
- **How** have we used canals in the past and how do we use them today?
- **What** specialist art, crafts, architecture and design can be seen on the canals?

Learning Outside the Classroom

- 24 of our destinations now have the [LotC Quality Badge](#)
- Visit your local canal and/or river (see [Visit Planning Guide](#) on Canal & River Explorers website)
- Visit a Canal & River Trust [Museum or Heritage Attraction](#).

Recommended Books and Websites

"The Story of our Canals" by Ladybird Books Ltd

"Poems for the Geography Classroom" by Mark Cowan

"Canal Life" by Ian McMillan

- www.poetrysociety.org.uk/content/commissions/canal/
- National historic maps old-maps.co.uk
- canalriverexplorers.org.uk
- wateraid.org.uk for world water day resources
- maps.cheshire.gov.uk/tithemaps/



Planning Grid cont...

KS2 NC Links **MATHS**

- **Pupils learn** to measure and calculate perimeter, area and volume.
- **Pupils solve problems** involving fractions and percentages.

KS2 NC Links **GEOGRAPHY**

- **Pupils understand** how water determines the location of settlements, economic activity and the distribution of natural resources.
- **Pupils use** geographical vocabulary such as natural, artificial, leisure, source, navigation, lock, flow, vegetation
- **Pupils identify** human and physical characteristics, key topographical features and land use patterns.
- **Pupils understand** processes that give rise to key human geographical features and how some have changed over time.
- **Pupils develop** their use of geographical tools and skills to enhance their locational and place knowledge.

KS2 NC Links **SCIENCE**

- **Pupils explore** and use classification keys to group, identify and name a variety of living things.
- **Pupils describe** the differences in the life cycles of a mammal, amphibian, insect and bird.
- **Pupils recognise** that environments can change and that this can pose dangers to living things.
- **Pupils construct** and interpret a variety of food chains.
- **Pupils identify** how animals and plants are adapted to suit their environment.

KS2 NC Links **ENGLISH**

- **Pupils distinguish** between fact and opinion.
- **Pupils listen** to, read and discuss a wide range of fiction and non-fiction.
- **Pupils write** fiction and non-fiction, planning, drafting, evaluating and editing their work.

KS2 NC LINKS **HISTORY**

- **Pupils understand** how national history is reflected in their locality.
- **Pupils develop** a chronologically secure knowledge and understanding of British, local and world history.

KS2 NC LINKS **ART/DESIGN & TECHNOLOGY**

- **Pupils learn** about great artists, architects and designers in history.
- **Pupils understand** how key events and individuals in design and technology have helped shape the world.

Writing opportunities across the curriculum:

- **Poetry:** the course of a river, sensory poetry.
- **Reports:** fact files/comparison tables for rivers and canals, tourist brochures, wildlife surveys.
- **Persuasion:** how to care for water in the environment EG Support World water day.
- **Argument:** is it better to travel by bike, boat, bus, train or car?
- **Narrative:** write a story about life on the canals.
- **Explanation:** what industry requires to become established and how industry can be good/bad for an area.

Week one

Learning Objectives:

- **Know** about great architects in history.
- **Know** about local history.
- **Understand** the impact of waterways on the UK.
- **Solve** problems.
- **Distinguish** between fact and opinion.
- **Understand** the significance of the locality.

Resources:

- Explorers volunteer led '[Build a Canal](#)' workshop
- [Explore our Waterways Past](#) poster
- [Travel & Transport](#) lesson plan
- [Build a Canal](#) online game
- [Building & Carrying](#) topic pack
- [Building Bridges](#) lesson plan and activities

Suggested activities

- Use the 'Chief Engineers' section from the topic pack to begin an investigation about one or more of these great architects. Pupils could select an engineer who built a canal, bridge, aqueduct or tunnel in their locality. They could produce a report or fact file about their chosen engineer and/or produce comparative fact files about each engineer that could be adapted into a top trumps style game.
- Use the "Building Bridges" lesson plan and activities to enable pupils to become great architects themselves.
- Use the Travel & Transport lesson plan (which is supported by the topic pack) to discover how and why canals were built and how they developed as important transport routes. Apply this to your local canal to discover its importance.
- Use the UK map in the topic pack to help pupils discover where canals go from/to. They could calculate (using the "Types of Boats" section) how long it would take cargo to travel from the sea port at Liverpool to their location by canal. They could compare different types of boat and calculate the percentage difference in time taken. Pupils could also calculate how long it would take cargo from the UK to reach the various parts of the British Empire. Hint: 19th Century sailing ships would have had an average speed of 7 knots (8mph) and steam ships would have had an average speed of 11 knots (12.5 mph).

KS2 NC Links

- **Geography:**
Pupils understand how water determines the location of settlements, economic activity and the distribution of natural resources.
- **History:**
Pupils study an aspect or theme of British history that extends their knowledge beyond 1066.

Pupils understand how national history is reflected in their locality.
- **Art & Design:**
Pupils learn about great architects in history.
- **Maths:**
Pupils solve problems involving fractions and percentages.
- **English:**
Pupils distinguish between fact and opinion.



Week two

Learning Objectives:

- **Learn** about their local area and the relationship between its geography and its history.
- **Know** the difference between human and physical geographical features.
- **Understand** why & how canals were built and how their use has changed over time.
- **Understand** the differences between canals and rivers.

RESOURCES:

- [Unravelling Rivers](#) lesson plan
- [Explorers Map](#) on website home page
- The book "Poems for the Geography Classroom" by Mark Cowan
- www.historic-liverpool.co.uk
- National historic maps old-maps.co.uk

Suggested activities

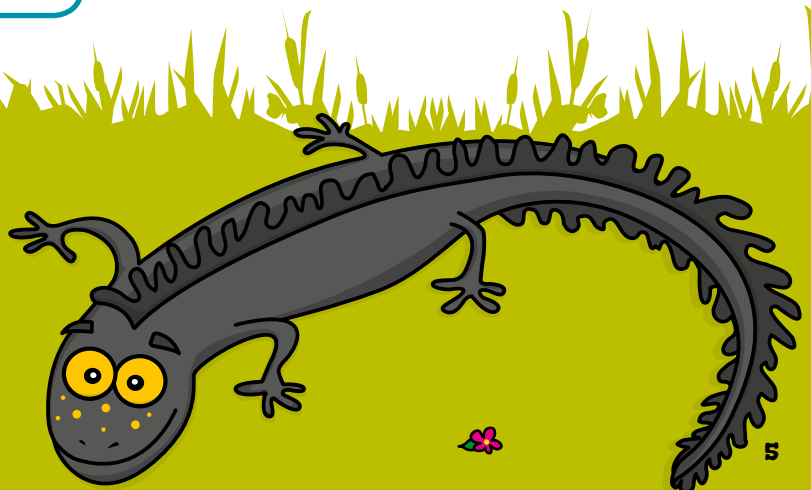
- Use the "Unravelling Rivers" lesson plan to help pupils understand the differences between canals and rivers, along with key geographical vocabulary.
- Use the book "Poems for the Geography Classroom" by Mark Cowan (Pg.78 "A River, of course") as inspiration for pupils to write their own river poetry.
- Look at historical maps to discover when canals were built in your area. The Cheshire Archive tithe map website is particularly good as you can compare maps from different periods of history and search by postcode.
- Investigate which factories/industries moved to your area following the building of the canal and how the population expanded. Pupils could create graphs to demonstrate these changes; they could calculate the area/perimeter of the town at different points in history and suggest reasons for the change.
- Pupils could create 3-D maps of the town at different points in history and put them together to form a timeline. They could use compasses to orientate their maps and to plot the positions of key historical and geographical features.

KS2 NC Links

- **Geography:**
Pupils understand processes that give rise to key human geographical features and how some have changed over time.

Pupils develop their use of geographical tools and skills to enhance their locational and place knowledge.

Pupils use geographical vocabulary.
- **History:**
Pupils study their local history.
- **Maths:**
Pupils learn to measure and calculate perimeter and area.



Week three

Learning Objectives:

- **Identify** land use patterns and how they have changed.
- **Understand** how canals have played a significant role in local, British and world history.
- **Develop** reading, writing and evaluation skills in fiction and non-fiction.

Suggested activities

- Use the "Waterways Today" topic pack to discover how our canals and rivers are used today.

Pupils could generate questions and theories around the reason(s) for these changes. Use the book "The Story of our Canals" to discover if pupils opinions fit with the facts!

- Use the "Waterways at War" topic pack to find out the role canals played at home and abroad during the first and second world wars.

Pupils could complete some persuasive writing arguing that canal workers were either as valuable or not as valuable as soldiers to the war effort. Pupils could write a diary as a canal worker or their child during wartime. Pupils could create a propaganda poster encouraging canal workers to keep their cargo secret.

Resources:

- **Waterways Today** topic pack
- 'The Story of our Canals' by Ladybird Books Ltd

KS2 NC Links

- **Geography:**
Pupils identify land use patterns.
Pupils use geographical vocabulary.
- **History:**
Pupils develop a chronologically secure knowledge and understanding of British, local and world history.
- **English:**
Pupils listen to, read & discuss fiction and non-fiction.
Pupils write fiction and non-fiction, planning, drafting, evaluating and editing their work.



Week four

Learning Objectives:

- **Know** about artists and designers in history.
- **Understand** how events, artists and designers have changed the world.
- **Develop** an awareness of British history beyond 1066.

Resources:

- [Life on the English Waterways](#) topic pack
- [Canal Art](#) activity sheets
- [Roses & Castles](#) online game
- [Build a Lock](#) online game

Suggested activities

- Use the "Build a Lock" online game to introduce pupils to the purpose and workings of locks. Pupils could book a lock demonstration at one of our waterway locations or museums/heritage attractions. Pupils could investigate Leonardo da Vinci – the first person to design lock gate technology and a great artist who was particularly interested in water.
- Visit one of our [museums](#) and book a canal art workshop for your class.
- Use the canal art activity sheets and online game as inspiration to create canal inspired designs in the classroom.
- Use the topic pack to discover why and how these unique arts and crafts developed. Pupils could compare canal art & crafts to the art and crafts of the Romany people or other similar communities.

KS2 NC Links

- **Art & Design:**
Pupils learn about great artists, architects and designers in history.
- **Design & Technology:**
Pupils understand how key events and individuals in design and technology have helped shape the world.
- **History:**
Pupils study an aspect or theme in British history that extends their knowledge beyond 1066.



Week five

Learning Objectives:

- **Know** and **understand** the differences between canals and rivers.
- **Describe** how canals and rivers are and have been used.
- **Use** fieldwork skills to investigate the locality.

Suggested activities

- Use the Unravelling Rivers lesson plan to revise previous learning and to introduce the term “physical geography”. Use the All About Canals presentation to introduce the human geography of a man-made waterway.
- Use the visit planning guide and build a trail activity to plan a visit to a local canal and/or river. Use fieldwork skills such as observation, sketch maps and compasses to compare and contrast these geographical features.
- Use the Cheshire Archive website and/or Historic Liverpool website to look at historic maps of the waterways. Pupils could compare how the courses of rivers have changed, how the building of canals changed the landscape and how land use has changed over time around rivers and canals.

Resources:

- **All About Rivers** fact file
- **Unravelling Rivers** lesson plan
- **All About Canals** presentation
- **Build a Trail** activity
- **Visit Planning** guide
- **www.historic-liverpool.co.uk**
- National historic maps **old-maps.co.uk**

KS2 NC Links

- **Geography:**
Understand geographical similarities and differences through the study of human and physical geography of a region of the UK.
Describe and **understand** key aspects of rivers and canals and types of land use.
Use fieldwork to observe, measure and record the human and physical features in the local area using a range of methods.



Week six

Learning Objectives:

- **Explore** the variety of living things in and around canals, rivers and ponds.
- **Understand** the changes that can occur in the environment, their causes and impact.
- **Describe** life cycles and food chains.
- **Identify** adaptations within plants & animals.

Suggested activities

- Use the Visit Planning Guide and Build a Trail activity to plan a visit to your local canal and/or river.
- Use the Canal & River Habitats topic pack, along with the habitats challenge activity sheets, to investigate the variety of living things in both environments. If your school had a pond, you could also investigate the variety of living things in your pond.
- Pupils could construct tables or graphs to show the diversity of living things at each location. They could compare the locations and map species that are common to all and species that are unique to one location. Pupils could identify the food chains that exist, based on the living things identified, at each location.
- Pupils could look back at their change of land use investigation and suggest how these changes could have affected the habitats & wildlife around canals and rivers.
- Pupils could write about a day in the life of one of the animals in one of the food chains they have identified.
- Use the Survival Secrets online game to introduce adaptation. Pupils could identify species that have adapted/evolved to fit with their environment whilst on their visit/s.

Resources:

- **Canal & River Habitats** topic pack
- **Waterway Habitats** activity sheet
- **Discover Wildlife** poster
- **Survival Secrets** online game
- **Build a Trail** activity
- **Visit Planning** guide

KS2 NC Links

- **Science:**
 - Explore** and **use** classification keys to group, identify and name a variety of living things.
 - Construct** and **interpret** a variety of food chains.
 - Describe** the differences in the life cycles of a mammal, amphibian, insect and bird.
 - Recognise** that environments can change and that this can pose dangers to living things.
 - Identify** how animals and plants are adapted to suit their environment.

