

# Building Bridges

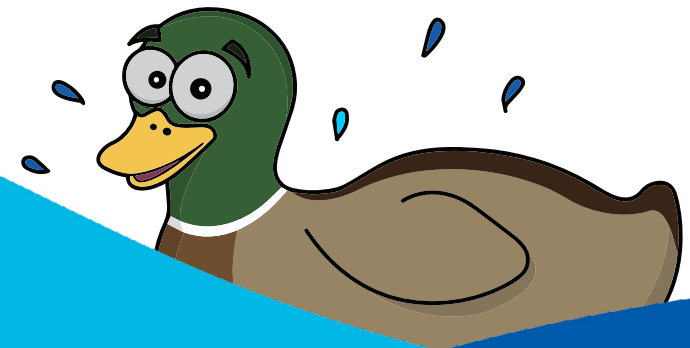


This pack consists of activity sheets for individual and group work, and whiteboard pictures for class discussion.

Teacher guidance notes and Building Bridges Practical Activities can be downloaded [here](#).



Learn about  
different types  
of bridges built  
across canals  
and rivers.



 @canalriverexplorers

 @CRTEExplorers

[canalrivertrust.org.uk/explorers](http://canalrivertrust.org.uk/explorers)

© Canal & River Trust Charity Commission no. 1146792

# Contents

<b>Slide 1</b>	Key words
<b>Slide 2</b>	Sensory words
<b>Slide 3</b>	Complete the sentence
<b>Slide 4</b>	Where are the bridges?
<b>Slide 5</b>	Beam bridge and arch bridge
<b>Slide 6</b>	Suspension bridge and cantilever bridge
<b>Slide 7</b>	Types of bridges
<b>Slide 8</b>	Bridge challenge
<b>Slide 9</b>	Bridges over canals (snake bridge and split bridge)
<b>Slide 10</b>	Bridges over canals (lift bridge and swing bridge)
<b>Slide 11</b>	Bridge dilemma
<b>Slide 12</b>	Bridge anagrams



 @canalriverexplorers

 @CRTEsplorers

[canalrivertrust.org.uk/explorers](http://canalrivertrust.org.uk/explorers)

© Canal & River Trust Charity Commission no. 1146792

## Key words

Use these key words as a reminder while you work.



**Suspension**

**Force**

**Vertical**

**Span**

**Engineer**

**Arch**

**Build**

**Structure**

**Connect**

**Viaduct**

**Pressure**

**Construct**

**Aqueduct**

**Keystone**

**Stretch**

**Support**

**Divide**

**Transport**

**Construction**

**Beam**

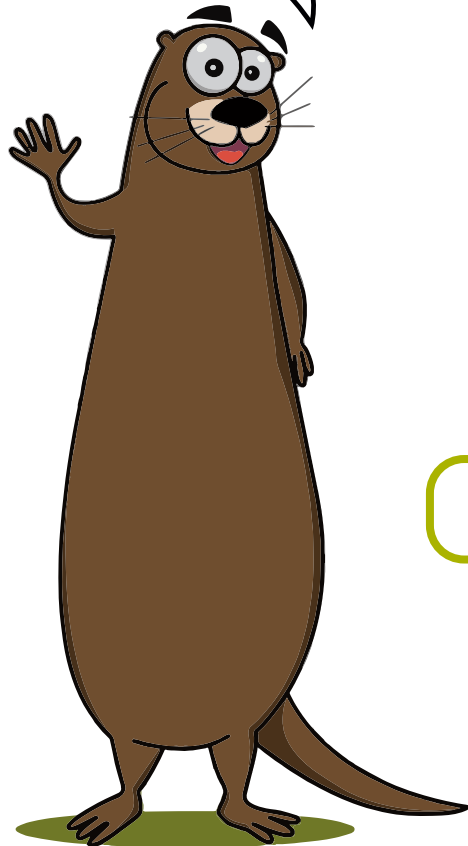
**Cantilever**

Make sure you learn the correct spellings.



# Sensory words

Use these key words as a reminder while you work.



<b>Swish</b>	<b>Reckless</b>	<b>Screech</b>
<b>Shivery</b>	<b>Dashing</b>	<b>Pungent</b>
<b>Plopping</b>	<b>Slippery</b>	<b>Sparkling</b>
<b>Gleaming</b>	<b>Idyllic</b>	<b>Sharp</b>
<b>Slimy</b>	<b>Glistening</b>	<b>Rumble</b>
<b>Enticing</b>	<b>Earthy</b>	<b>Refreshing</b>

Make sure you learn the correct spellings.



# Complete the sentence

Write down the definition that your teacher gives you:

.....

.....

.....

Do your definitions match?

What is *your* definition of a bridge? Write your answer in the box.



# Where are the bridges?

Locate the bridges on your map and see which type of obstacle they span.



# Beam bridge



## Beam bridge

This is the simplest type of bridge.



5

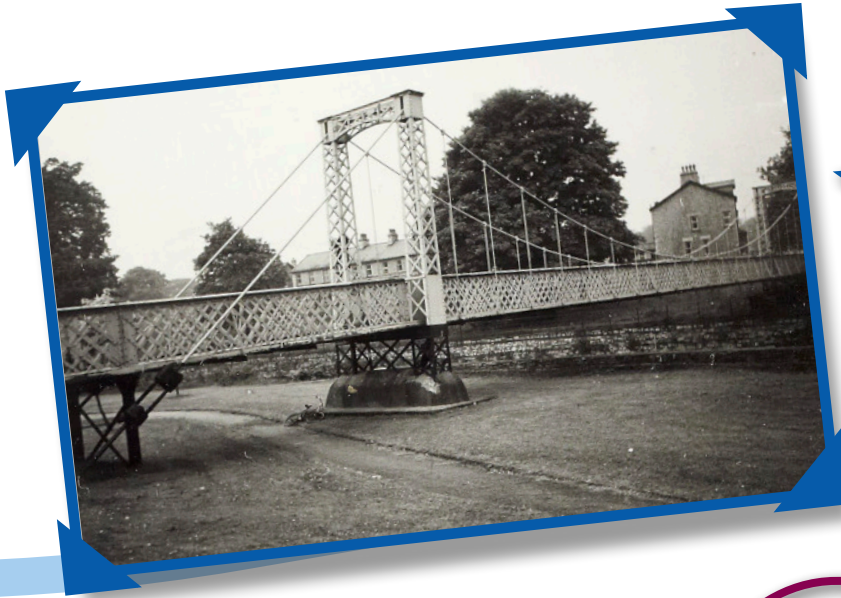
## Arch bridge

This type of bridge was invented by the Romans.



# Arch bridge

# Suspension bridge



## Suspension bridge

The walkway in this suspension bridge is suspended using steel cables.

# Cantilever bridge

## Cantilever bridge

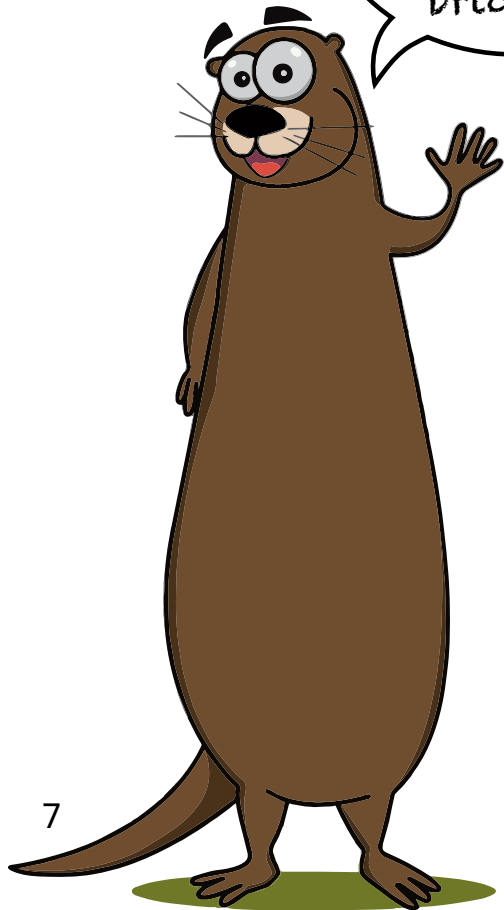
A cantilever bridge is made from beams supported on one side. The supports were built either side of a canal or river and joined in the centre to form one bridge.





# Types of bridges

Now you know the four types of bridges, draw your own bridges.



<b>Beam bridge</b>	<b>Arch bridge</b>
<b>Suspension bridge</b>	<b>Cantilever bridge</b>

# Bridge challenge



The Canal & River Trust maintains over 3000 bridges across England and Wales.

Canals are waterways made by people in order to carry people and goods from one place to another. Large boats or barges with goods piled high would not be able to travel under low bridges.

## The Challenge

A canal has been built across your land. You need to get across the canal to go to the village to water your crops.

The boats travelling along the canal are always piled high with goods.

It would be very difficult to build a bridge tall enough for the boats to pass by.

## How would you solve this problem?

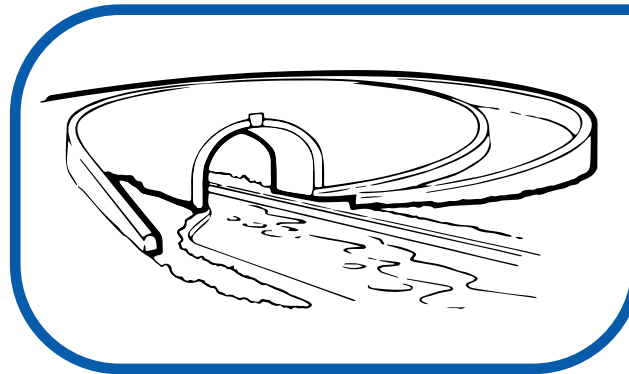
Draw your solution on a large piece of paper, ensuring that your drawing is clearly labelled and explained. Present your findings to the class.

# Bridges over canals

Here are two types of bridge that you might find on a canal.

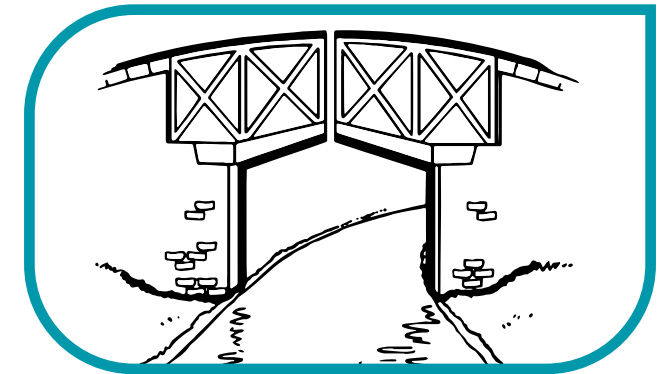


## Turnover or snake bridge



This is a special type of arched bridge, specially made for canal boats being towed by horses. The snake bridge allows the horse to change from one side of the canal to the other, without being untied from the boat.

## Split bridge



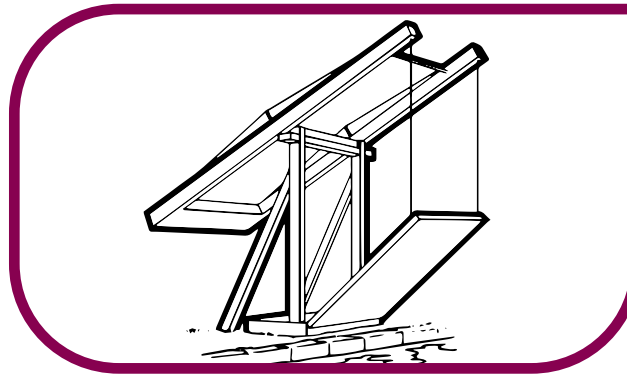
Split bridges are a type of cantilever bridge and were often built next to locks so that the boater could get from one side of the lock to the other. As the horse pulled the boat out of the lock the towrope could pass through the gap in the middle of the bridge.

# Bridges over canals

Here are two  
more canal  
bridges.

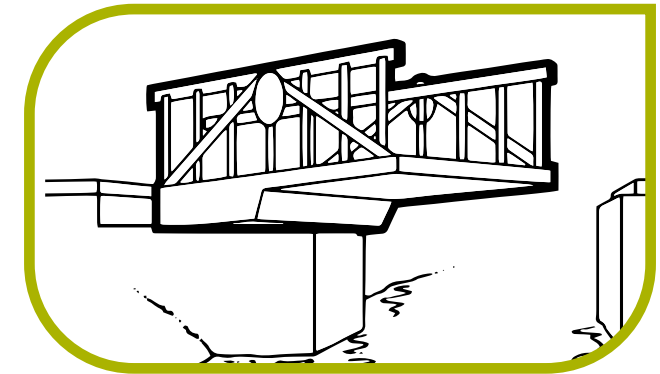


## Lift bridge



Manual lift bridges have a chain which hangs from the 'balance arm'. When the bridge is open care needs to be taken to ensure the bridge doesn't fall back down again. Sometimes there is a special mechanism and sometimes a person needs to sit on the balance arm until the boat is clear.

## Swing bridge



Swing bridges need to open to let boats through. They swing on a pivot until they are parallel with the bank. Manual swing bridges can usually be moved with a good push after unhooking a retaining chain – they are likely to be used for pedestrians only.

# Bridge dilemma

Beaumont Hall  
Bridge on  
the Lancaster  
Canal has been  
repeatedly  
damaged by  
vehicles.



# Bridge anagrams

Unscramble the anagrams to reveal each word. Remember, they are all about building bridges.



Anagram	Answer
nalca	
mabe	
levreilcant	
snusseponi	
harc	
gwins	

**Create three anagrams yourself and test a friend**
