

Learning Activities for Primary Schools





Maths is the building blocks of all structures, particularly man-made ones like the canal. This section will help students use Maths to work out how to travel down the canal and learn about a technological marvel – the Falkirk Wheel.

Travelling on the Canal

A journey that used to take a whole day – and travelling through 11 locks one by one – now just takes a matter of minutes because of the invention of the Falkirk Wheel.

Here are some examples of the fastest and slowest ways to travel along a canal...



The Falkirk Wheel



What is it?

The Falkirk Wheel is a boat lift. It is the only boat lift of its kind in the world. The Falkirk Wheel connects the Forth and Clyde and Union canals. It replaced the locks that once joined these two canals.

The Falkirk Wheel lifts boats up 24 metres high. Boats can then reach the level of the Union Canal. The Falkirk Wheel was opened in 2002.

Why was it built?

Prior to the 1930s, the Forth and Clyde and the Union canals were joined together by 11 canal locks, and it took boats almost a whole day to travel through the canal using these locks one by one.. These locks were no longer used from 1933. In 1998, work began on linking the Forth and Clyde and Union Canals once again.





How was it built?

Parts of the Falkirk Wheel were made and put together at an engineering firm in Derbyshire. They were then taken apart and transported to Scotland. 35 lorries carried the pieces before they were bolted back together and lifted into position at Falkirk.

The Falkirk Wheel Continued





How does the Wheel work?

The Falkirk Wheel has two gondolas (passenger docks) filled with water. The boats are moved in them. Two boats can be lifted and lowered at the same time.

The boats sit side by side in the gondola. Once the boats are inside the gondola and the water is at the correct level, it is sealed so that no water can escape.

Once the water is at the right level, the Falkirk Wheel is turned by machinery. It keeps the boats level and in the same position.

It takes around 4 minutes for the gondola to raise or lower boats.

Once at the top, the gondola is locked in place and the gate is opened. The boats can then sail on to the next part of their journey.

Fun Facts

- 1200 tonnes of steel were used to make the Falkirk Wheel
- Over 1000 people were involved in building it.
- There are over 15,000 bolts holding the Falkirk Wheel together. Every one of these bolts was tightened by hand.
- The Falkirk Wheel is 35 metres high; the same height as 8 double-decker buses in one pile.
- The energy used to turn the Falkirk Wheel is the same as it would take to boil 8 kettles.
- Each of the two gondolas on the Falkirk Wheel holds 500,000 litres of water. That's enough water to fill an Olympic sized swimming pool!





Solve problems with your peers and work out what is the fastest and slowest way of travelling down the canal!

Maths

Look

- As a group, look over the Falkirk Wheel factsheet pages and each write a paragraph on a different aspect
- Look at the pictures in this booklet, and list what ways you can travel when you are on, or next to the canals

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 Talk in your group about some of the most important facts you learned about what makes the Falkirk Wheel such a special invention

Talk

- Talk about the different ways you can travel along the length of the canal
- Talk about which is slowest and which is fastest methods

Make



- Using your Scrapbook page, make a list or draw pictures of different ways to travel along the canal
- As a group, make an information poster to present to the class about what you learned about the Falkirk Wheel and what makes it such a special invention
- Make some example questions for your classmates where they need to work out the quickest way along the canal

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Congratulations on completing this section of the booklet. Have your teacher tick off your achievements in Maths

Subject	Code	Description	Achieved
Maths	MNU 0-10a	I am aware of how routines and events in my world link with times and seasons, and have explored ways to record and display these using clocks, calendars and other methods.	
Maths	MNU 1-10c	I have begun to develop a sense of how long tasks take by measuring the time taken to complete a range of activities using a variety of timers.	
Maths	MNU 2-10c	Using simple time periods, I can give a good estimate of how long a journey should take, based on my knowledge of the link between time, speed and distance.	
Maths	MTH 2-12a	I have worked with others to explore, and present our findings on, how mathematics impacts on the world and the important part it has played in advances and inventions.	
Maths	MTH 1-12a	I have discussed the important part that numbers play in the world and explored a variety of systems that have been used by civilisations throughout history to record numbers.	