Kennet and Avon Canal Museum

Cross-curricular work linked to a visit to the museum: The following information can also be downloaded from https://katrust.org.uk/museum/

Location: The Wharf, Couch Lane, Devizes SN10 1EB
Tel: 01380 721279
Email: admin@katrust.org.uk
Website: https://katrust.org.uk/museum/ which includes photographs of many items in the museum.

Cost for group visit: Schools: children £1.00 each, helpers and adults free. Other parties by donations

There is a café which includes a gift shop next to the museum.

The canal could form the focus for a local study meeting the requirements of KS2 curriculum for History and Geography.

A trip to the museum could be combined with a boat trip and workshop from the Canal & River Trust (Devizes Office, The Locks, Devizes SN10 1PQ)
https://canalrivertrust.org.uk/explorers/educational-sites/devizes-wharf

Other possible activities*: {Information for teachers}*
1. Science & numeracy: work on forces and friction

Using a slide or ramp and a toy eg lorry. Put the toy at the top of the slide or ramp and let it fall down on its own. Don't give it a push. Measure how far it went. Do this 5 times. Record your results using a bar chart. What is the average distance travelled by the toy?

Wet the slide and again put the toy at the top of the slide or ramp and let it fall down on its own. Don't give it a push. Measure how far it went. Do this 5 times. Record your results using a bar chart. What is the average distance travelled by the toy?

[On the wet slide there should be less friction so the toy travels further. In the same way goods can be moved more easily through water by a horse than on a bumpy, ill-repaired road so canals were made to carry goods.]

{More information:

At a steady walking speed, a horse can move approximately fifty times as much weight in a boat as it could with a cart on old fashioned roads, possibly a hundred times its own body weight. The load moves with minimal friction whilst the strength of the animal is linked directly to the load with little wasted energy and it was this efficiency equation that inspired the development of the canal system in the eighteenth century. (From Canal Junction)]

Can you think of any other problems caused by bumpy, ill-repaired roads? *[Fragile goods were likely to break so reducing the seller's profits. Canals offered smoother passage and so fewer breakages]*

2. Science: forces and friction

On the picture below, draw arrows and label them to show the directions of the forces that are affecting the boat, for example gravity – draw an arrow down to the boat and label it. Add any other forces.

{Forces include upthrust of the buoyancy of water, air resistance, water resistance (drag), pull of the horse}

Above *Junction of the Regent's Canal, Paddington.*

{Extension work

a) Opposing forces: The level at which a boat floats on the water depends on the balance between the pull of gravity and the upthrust of the water. The more loaded a boat is, the greater the downwards thrust of gravity over the push up of buoyancy, and the lower the boat rests in the water. Demonstrate this with a model boat or floating container, e.g ., ice cream tub. Place it on the water, and carefully add 'cargo'.

b) Streamlining: Pupils could discuss how changing the shape of the boat will affect water resistance. Experiment with pieces of plasticine in different shapes but the same mass being dropped into jugs of water. The larger the surface area, the more water resistance and so the object is slowed. A boat's bow is designed to lessen the drag experienced by the boat as it moves forward in the water.}

3. Science: steam power

Crofton pumping station on the canal still has a working steam engine from 1812; it is the oldest working beam engine in the world that is still in its original location and capable of performing the task for which it was installed.

https://www.youtube.com/watch?v=6yzZuIw25TU and https://www.youtube.com/watch?v=FnyV3-th29s show how you can demonstrate steam power using a soft drink can. (One looks slightly safer than the other.)

https://www.youtube.com/watch?v=DjI1cBHMfjQ and https://www.bbc.com/teach/class-clips-video/discovering-the-work-of-james-watt/zdqscqt *videos on John Watt*

4. Problem solving, map work, numeracy:

Which route to pick?

[You will need a map to show the area between Bath and Newbury.]

When deciding on the route for a canal, the company building it had to think about

Distance: a shorter route might be cheaper to build and allow goods to reach their destination quickly

BUT

if the short route included hills then the canal would need a tunnel through them so the canal would stay on the level (which would take time and be expensive to build – remember the workers only have spades and wheelbarrows) or locks to allow the boats to move up and down (also expensive and locks need lots of water so they would need a good supply or a reservoir or even to pump water back up to the top of a flight of locks).

So sometimes a longer, flatter route might be better than a short route.

Proposal A: route from Newbury to Bath via Devizes (South summit route), surveyors report adequate water supply. Devizes merchants support this but Marlborough merchants oppose it. Tunnel needed for 2 miles of route.

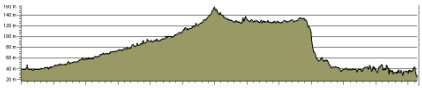
Proposal B: route from Newbury to Bath via Devizes (North summit route, surveyors report adequate water supply but still some issues, Devizes merchants support this but Marlborough merchants oppose it. They may have to be given concessions. 6 more locks and pumping station needed

Proposal C: route from Newbury to Bath via Hungerford, Marlborough, Chippenham and Bradford. Surveyors have some concerns about the water supply, Marlborough merchants support this route

Explain which route you would pick and why.

At the museum, compare your chosen route with the one decided on by the Canal Company.

{https://www.ldwa.org.uk/ldp/members/show_path.php?path_name=Kennet+and+Avon+Canal+Walk shows how the final route chosen for the canal actually goes up and then down again



Caen Hill flight of locks shows clearly how reservoirs had to be built to supply the locks on the chosen route with water: https://canalrivertrust.org.uk/news-and-views/media-centre/filming-and-photography/our-filming-and-photography-locations/caen-hill-locks-kennet-and-avon-canal}

5. Technology

Look around the museum especially at the display on the interior of a narrowboat: find out

- how clothes were washed and ironed {*wash board, flat iron – this was done by women. Point out the time and energy required.}*
- how boats were heated *{coal stove}*
- how horses were harnessed to the boats *{model of horse and harness, children often led the horse – whatever the weather}*

Think about what you CAN'T see *{ideas to discuss, e.g. no running water (water had to be heated on stove), no toilet (chamberpot to canal), no bathroom, no electricity [oil lamps used oil such as whale oil and later kerosene], no modern technology, e.g., tv, computer etc!}*

Compare the living space for a whole family in the boat with the living space you have.

6. Art Work

https://canalrivertrust.org.uk/enjoy-the-waterways/canal-history/roses-and-castles-canal-folk-art
http://www.canaljunction.com/narrowboat/roses_castles.htm
https://www.youtube.com/watch?v=aazLvVM0SwI

Canal boats and their contents were brightly decorated. {*Encourage pupils to design their own panel or jug decorations.}*

7. Literacy: persuasive writing

Write a letter to possible shareholders living in Bristol to persuade them to invest in the canal. Think about what the benefits will be for them, for the area and for businesses generally. Think about what they may be worried about and how you can persuade them that they don't need to be concerned.

8. Literacy: descriptive writing

Collect information as you go around the museum
Write 2 diary entries for a child living on a boat on the canal in the 1870's: one from summer and one from winter. What does the inside of your boat look like? How do you all share the space? What jobs do you have to carry out to help the family? What are your father and mother worried about? Describe what you see as you travel along the canal.

9. Literacy: poetry

Write an acrostic poem to give a feeling of the canal. This one has been started off for you

Clear water flows along narrow channels
Amid…..
N
A
L

10. Design, writing for an audience

Design a leaflet for the museum to explain why people should come and visit it. Use information you have collected and information technology to create your leaflet.

{*The best leaflets copied and be used by the museum if you send us examples! We would be pleased to come to an assembly to thank your pupils}*

Useful resources:

https://katrust.org.uk/history/ including sections on planning the canal, building the canal and working the canal

https://www.bbc.com/teach/class-clips-video/the-transport-revolution-britains-canal-network/z6d8qp3

https://www.bbc.co.uk/news/uk-england-34340091

https://canalrivertrust.org.uk/media/original/31089-life-on-the-english-waterways.pdf?v=288f40

https://canalrivertrust.org.uk/media/original/31136-building-and-carrying-topic-pack.pdf

http://www.canaljunction.com/craft/horsedrawn.htm

Children's novels:

- Snowy by Berlie Doherty,
- Jeff Carter Series by Geoffrey Lewis
- The Stowaway and Golden Compass by Mike Simmons

If learners have more questions after their visit, please email the museum and we will try to answer!