SECTION 5

Building the canal
Learning Intention: To recognize primary and secondary sources.

Activity 1:

The children set themselves up as engineers and investigate different routes for the canal using the O S Cassini map of Gloucester and the Forest of Dean, 1828-1831, Sheet 162.

Is the cheapest route necessarily the fastest route?

Why build from Framilode?

(Coal was traditionally brought from the Shropshire coalfields and transported down the Severn. Later the Forest of Dean coalfields were frequently used as coal was loaded onto boats at Bullo Pill).
<table>
<thead>
<tr>
<th>Name of Places</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Lock Pit</td>
<td>748.20</td>
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<tr>
<td></td>
<td>496.53</td>
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<tr>
<td></td>
<td>743.58</td>
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<td></td>
<td>43.19</td>
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<td>33.10</td>
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<td>Etc.</td>
<td>359.6</td>
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<td></td>
<td>323.14</td>
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<td></td>
<td>22.92</td>
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<td></td>
<td>18.7</td>
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<td>354.5</td>
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<td>28.2</td>
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<tr>
<td></td>
<td>471.1</td>
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<tr>
<td></td>
<td>872.2</td>
</tr>
<tr>
<td></td>
<td>30.20</td>
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<td>20.20</td>
</tr>
</tbody>
</table>

Part of an account of the costs of the building of a lock at Framilode
Activity 2:
Using magnifiers children need to read through the document in stages. Ask the children to have the following questions in mind –

- What type of document is it?
- Who produced it?
- Do you know anything about the authors?
- Why was it written?
- When was it written?

The children can then read through again and underline words and phrases they think they understand.

- Are there any words that they can substitute for modern words?
- Can the children make drawings to help them understand what the document is?

The class can then discuss the document.

The following categories can be drawn from the discussion -

* Names of people and/or companies
* Names of Places
* Measurements
* Dates
* Jobs
Activity 3:

The children form five groups and each investigate one of the categories.

Each group to make presentations of their findings, using models, ICT and talks.

Names of people and/or companies

The children could become a company of directors and issue shares. They could investigate the following document from the Company of Proprietors of the Stroudwater Navigation to understand the case for the building of the canal and indeed what the difference was between the term navigation and canal.

The children could then use diagrams of tunnels, locks, aqueducts and embankments to enable them to design

Their least expensive route

Their quickest route (remembering that locks and tunnels took time to negotiate)
THE CASE OF THE STRoud WATER NAVIGATION, GLOSTERSHIRE.

The River Stroud Water runs through a populous country: it is computed that nearly a million Inhabitants are scattered within a narrow Circle contiguous to its Banks, making Stroud the Center, who are chiefly employed in that Staple Trade, the Woollen Manufacture; the particular Benefit of which Trade is not confined to this Circle only, but is extended to every Town and Village from Twenty to Thirty Miles Distance, where Spinning Work is regularly carried on; in consequence of which the Poor are employed and the Land eased. It has been computed there are near One hundred Mills, that have been, or still are, more or less employed in this Manufacture; indeed some of them, from the great Decay of the Coarse Trade, are now turned in Part, or wholly, to other Purposes, some lie totally idle, others are little or not half employed; and it is with regret now mentioned, as a melancholy Truth, that One Third of that Number, fully employed, would be more than sufficient for the whole Clothing Trade of the Country; it is also to be feared they ever will be sufficient, unless more Hands could be found to be employed in fine Spinning.

Within the Circle before mentioned, the Lands, though well cultivated, are not suffixed to produce One Fourth of the Necessary of Life for the Consumption of the Inhabitants, in consequence of this, vast Quantities of Corn are brought from Gloucester, Herefordshire, the Vale of Evesham, the Cotswold Hills, and other Places; Wheat, Barley, Oats, Beans, Flour, Butter, andCheese, are all brought from distant Parts by Land Carriage, and the Horses and Carriage goods return unloaded. Great Quantities of Wool and Yarn from Carmarthen, Tewksbury, and other Places, without any Back Carriage. Let it be here remarked, that Corn, upon the general Average through the Year, in the Country of Gloucester (and more so in the manufacturing Part) is dearer than in any other Part of England. This evidently appears from the weekly Returns published by Authority: and our Markers being badly supplied, the labouring Manufacturer is driven into Fluckters Hands; he pays a higher Price for his Necurities, and consequently he cannot afford to labour so cheap, which is prejudicial to the Manufacture; or he becomes a Burden to the Factories. Thence Evils our Navigation (which terminates in the very Heart of the manufacturing Country) will at least greatly relieve. It has been like wise computed from late Enquiries, that within the Circle before described, Twelve thousand five hundred Tons of Coals are at present annually consumed; but as we need not go to any Extremes of Calculations, shall set down only Ten thousand Tons, the supposed Quantity that would be brought by this Navigation, were it now completed. This Consumption will increase at Home, by its being brought cheaper, and Carrollers, with many other Places on each Side, and even beyond it, will get Coals cheaper from Wallbridge (which is the intended Port of Stroud) than from any where else. The empty Corn Waggonets, the Horses that bring Wool, Yarn, Flour, &c. will load back with Coals, which will greatly increase the Consumption. And here it will be proper to remark, that the Price of Coals at Wallbridge is now in Summer Nineteen Shillings per Ton, and in Winter Twenty-one Shillings and Twenty-two Shillings per Ton; the Poor purchasing their Pittances thereof after the Rate of Twenty-four Shillings and Twenty-five Shillings per Ton; and a sufficient Supply at their high Prices, from the Banks of the Roads in the Winter Season, is often not to be procured. The same Coals, by the Navigation, will be sold at Wallbridge, even to the Poor in small Quantities, after the Rate of Fifteen Shillings per Ton; considerable Persons in the Coal Trade having already offered to deliver it lower. The Land Carriage from Bristol to Stroud is Forty Shillings per Ton, and round by Gloucester, which is partly by Water and partly by Land, it is Twenty Shillings per Ton, and upwards. The Freight of Goods from Bristol to Wallbridge by this Navigation (besides the Conveyance being much quicker than round by Gloucester) will, at the highest, be no more than Ten Shillings per Ton. There needs no other Influences to prove the Benefit of this intended Navigation, not only to the Poor, but to the Manufacture in general. Though there is yet a a Drifting Circumstance that Should not be omitted: A Barge, that will bring up Seventy Tons of Coals, will employ only Four Men, six or Eight Hours, to navigate it from Bristol to Wallbridge, being by the Canal little more than Eight Miles: This Barge Load of Coals, to be brought by Land Carriage upon Waggonets, will employ Thirty-five Waggonets at least, One hundred and Forty Horses, Thirty-five Carussels besides Boys, One whole Day, it being above Ten Miles. As and most of the Coals brought up in Winter are carried on Horses Backs, at Two hundred Weight upon each Horse, this Barge Load will require Seven hundred Horses and One hundred Men, reckoning Seven Horses to a Drift; but the Fact is, there are seldom more than Five, and often less than that Number, all these will be employed One whole Day to make the like Conveyance. The rapid Decrease of our Woods has raised the Price of that Article.

Plate 13. The Case of the Stourwater Navigation was published in October 1776 and outlined the Company’s case for a new Act. GCL JX 14.21(2).
Names of Places

Use ‘A Plan of the Navigable Canal from the Town of Stroud to the River Severn at Framilode’ to match the names of the places against the named plots on the map of the proposed route.

Do they think each owner is happy for the canal to pass through their land? How will it be of benefit to the individual owners? Is there an owner who would oppose the scheme? Why?

Children can compare maps of the current settlement by the canal with the map of the route in 1775. What has been the effect of building the canal on the settlement of the area?

Is the effect still the same today or is modern settlement clustered around other features of the landscape?
Measurements
The children make a scale model, using card, of the lock pit from the measurements given.

What is the significance of a lock? What job does it do.

Convert the measurements to metric.

The children estimate the cost of building the Stroudwater canal per mile.

They could test different geological deposits to determine how much leakage there would be through the rock and how much puddling and why puddling would be needed.
Dates

The children construct a transport timeline, which shows the developments of transport systems over time.

Describe the effect canal transport had on the town of Stroud.

Explain the significance of the canal building age and why was it so short lived.
Jobs

All the tasks mentioned on the account document indicate a system for building canals:

- Rampering
- Cutting
- Wheeling clods
- Pumping water
- Wheeling to make up bank
- Puddling in the above works

Children can research what these jobs entailed.

From the description of these jobs, and the later photographs below can the children deduce how a canal was constructed?
Top picture - Lock under reconstruction c 1907
Lower Picture – Reconstruction work Lower Puck Mill
Pictures from the collection of Stanley Gardiner, Lionel Padin and Mike Mills
(see www.junctionheritage.org.uk/Topics)