

the outdoor classroom

bridges

Curriculum focus:

Science

Keywords:

Bridges, Land Use, Geography, Humanities, History

Skills learnt in this worksheet include:

Observing and questioning
Collecting and recording evidence
Classifying, representing and interpreting data
Undertaking fieldwork
Environmental education
Learning technical language related to bridges
Art and design
Use ICT

Resources required for this activity:

Datasheets
Summary sheet
Camera (optional)
1896 sketch map of Mereway
Map showing both rivers
Tape measure

Further information and resources that could be used to support this topic include:

Examples of art depicting bridges from the National Gallery, London
(www.nationalgallery.org.uk):

Attributed to Jean-Antoine Constantin
Bridge at Subiaco, about 1777

Italian, Venetian
Augustus and the Sibyl, about 1500

Claude-Oscar Monet
The Japanese Bridge, about 1919-24

Claude-Oscar Monet
The Water-Lily Pond, 1899

Claude-Oscar Monet
The Thames below Westminster, about 1871

Alfred Sisley
View of the Thames: Charing Cross Bridge, 1874

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Alfred Sisley
Under the Bridge at Hampton Court, 1874

Joseph Mallord William Turner
Rain, Steam, and Speed - The Great Western Railway, 1844

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Ideas for activities on site:

- 1. Walk along the river and look carefully at all the bridges and structures that you can find along it.**
You may want to take photographs to illustrate your findings.

On your data sheet record the following information about each bridge:

- What is the purpose of each bridge?
- Are there any other structures that cross the river? What is the purpose of these? They can be man made or natural.
- What materials have been used to build the bridges?
- What shape are the bridge? Why do you think that that they are this shape?
- Measure the bridge with a tape measure or in paces.
- Does the shape and material used to construct the bridge tell you anything about the purpose?
- How old do you think the bridge is?
- Are there any signs that the bridge might fail or has failed? – look for cracks, reinforcing etc. Why has this problem occurred?
- Who do you think is responsible for each bridge?
If you working in Mereway Nature Park look at the identification mark on the railway bridge. This gives a unique number for the structure and states the distance from Waterloo station measured in units of Miles and Chains.
- Look at the river banks at each bridge. Can you see any effects of the bridge? What does the river do or is there no effect?
- Draw a sketch of each bridge and label the different parts of the bridge.

2. Design a new or replacement bridge for the River Crane.

Look at a map showing both rivers.

On the map mark where you would locate your new bridge.

On a data sheet record the following information:

- What is the purpose of your bridge? Which type of vehicles will the bridge carry or is it just for pedestrians?
- Think carefully about what routes it will join up. Who will use it?
- What materials will your bridge be made of?
- What shape will your bridge be? Will it span the river or will it need a central pier?
- What features need to be included to ensure that the people using it are safe?
- Draw your design for a new bridge. This could later be worked up on a computer programme.
- In class paint your bridge design, or one of the bridges that you have looked at, in the style of one of the artists you have studied. Include features that you can see along the river e.g. the willows, the oak trees etc.

3. For use in Mereway and Kneller Gardens.

Look at the 1896 sketch map of Mereway

On a summary sheet record the following information:

- How many bridges can you see on the sketch map?
- Are any of the bridges the same ones that you can see today?
- Are there any that are no longer in place?
- Why are there more bridges today than in 1896?

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- Look at the spot where Mereway Road crosses the River Crane.

How do you think the river was crossed at this point? Do you know what this is called?

- Stand on the bridge which you think is at this point and compare what you see with the 1896 map.

Why do you think that a bridge was built here?

The river is very different today - how is it different, what has been done to it?

Other activities:

Music at key stages 1 and 2 - Singing songs with control and using the voice expressively

Play 'Hump Bridge': the children hum for a long time on one note then suddenly make a rising and falling sound to illustrate travelling over the bridge.

Draw lines on the board using the different shapes, eg hump bridge, and ask the children to 'sing the line' using an open vowel sound, eg 'ah'.