



CLIFTONSUSPENSIONBRIDGE

Case Study: Building a Brunel Museum in a Primary Setting

Partners: Clifton Suspension Bridge Trust (CSBT) and Perry Court Schools
Timeframe: 2nd – 6th December 2013
Project Team: Laura Hilton, Visitor Services Manager (CSBT)
Nikki Middleton, SENCO (Perry Court)
Helen Jeffrey, Community Learning and Volunteer Officer (CSBT)
Alison Turner, Research Engineer (CSBT)

Objectives

1. Increase knowledge and understanding of the life and work of Isambard Kingdom Brunel.
2. Encourage every child to experience and explore Isambard Kingdom Brunel's work and form their own opinions of it.
3. Create opportunities for every child to meet, interact with, and question Brunel experts outside the school setting.
4. Work individually, in groups, as a class and as a school to present collected knowledge and information to an external audience.
5. Develop new resources which may be shared with other learners.

Methodology

In October 2013, we were contacted by Nikki Middleton, SENCO, Perry Court Schools, who asked if we would be assist in the development of activities to support 'Brunel Week'; a project which involved all children from Reception to Year 6 in a celebration of the life and works of famous engineer Isambard Kingdom Brunel.

After meeting to discuss the project, we suggested that the pupils could work collectively to create a 'Brunel Museum' by developing displays for the infant and junior halls based on their own research. The museum would be opened to the public at the end of the week to showcase and celebrate all the work compiled whilst also giving the children a chance to fill the various roles required by a working museum.

Perry Court Curators

Laura Hilton and Nikki Middleton worked together to assign roles to each year group and develop a delivery programme which fitted with other pre-planned events (including trip by Year 1 to the ss Great Britain, City Sightseeing tours of Brunel's Bristol, and visits by an author and Brunel character actor).

Assembly:

With just 20 minutes to introduce the concept of 'Brunel Week' and the idea of building a museum to the school, Laura Hilton lead an assembly which first introduced Isambard Kingdom Brunel and the Suspension Bridge and then used quickfire slides to tell the story of Brunel and his involvement in the design and construction of the bridge during the period 1829-1864. Although shown only briefly, the images on the slides were chosen as they would be referred to again in later sessions, helping pupils to contextualise information.

Object Handling:

Following the assembly, each year group was invited to attend a 30-45 minute interactive object based session which introduced the concept of a museum through discussion, explained the role of a museum curator and other museum staff and revealed stories relating to objects from the CSBT collection which included artefacts dating back to Brunel's time, social history stories, demonstration activities and a mystery object. Each year group was assigned a particular object of relevance to their assigned role and discussion was focussed around this.

At the end of each session, teachers were presented with a copy of the Clifton Suspension Bridge Guide Book and a worksheet which contained a short exhibition brief, some planning guidance and a list of suggested project outcomes. Additionally, pupils were challenged to speak to their friends and family about the bridge to see what they could learn (social history research) – or to think of questions they would like to ask on the day of their visit.

"After lunch we went to a workshop about the Suspension Bridge. It was a very interesting and we learnt loads. We also heard stories about how different people were involved with the bridge." Year 1 pupil

"They use crystalized pig urine to grit the roads and to stop the iron from getting rusty." Dean, Year 1

*"In our workshop we saw a big rusty old bolt." Mrs Thorn
"I have never seen a bolt that big" Charlie, Year 2*

Years 1-2 Artists:

The Year 1 and 2 Artists began their visit to the Bridge by working with Laura Hilton to identify the differences between objects relating to the structure of the bridge such as nuts, bolts, plates and machined components. The groups discussed the ages, weight, materials and function of the objects, making deductions about them through question and answer activities.

Following this, pupils explored the Bridge, recording the shapes, textures and colours of larger components such as the chains, towers and deck and using observational skills to document the surrounding area. Pupils were involved in active discussion throughout, recording their findings on worksheets for use in the classroom.

Finally, pupils worked in teams to record who and what crossed the bridge. These activities were designed to work in combination to give pupils a good knowledge of the structure of the bridge, its environment and its users so that they might create detailed and accurate artwork in the classroom.

"Today we went on the Suspension Bridge with some tour guides. As we crossed the bridge, we were told lots of interesting facts about it, and about Brunel." Mrs McCann

"Yesterday we were engineers, like Brunel, and had a go at building the Great Western Railway. In the afternoon we walked along the Suspension Bridge. It was amazing! We spotted lots of different shapes and colours." Year 1 pupil

Year 3 Reporters:

Year 3 began their visit to the Bridge by examining images of the gorge in the 1800s so they were aware of the impact of the build on the surrounding area. They then worked in groups to judge some of the original entries to the Bridge design competitions, choosing a favourite and justifying to the class why they thought it should be constructed.

Following this, the pupils went out on to the Bridge and explored the structure by listening to and discussing primary source accounts of key events in the Bridge's history (the discovery of vaulted chambers in the abutments, the Bristol riots, Brunel crossing the gorge in a basket, the opening ceremony). At each point, pupils were asked to imagine what it would have felt like to have been present during the event, with teachers recording the 'wow words' for later use in class.

Year 4 Researchers:

Year 4 pupils began their visit with a ten minute question and answer session on the role of researchers in a museum context, giving pupils the chance to focus on their year group's role and prepare to collate and record information that could be used in class to create their timeline.

Pupils were then led on an illustrated guided tour of the bridge, working in pairs to record key dates on worksheets. To meet the aims and objectives of the weeks activities, the information provided during the tour was tailored to focus on Brunel's influence on the design and build. The group ended their visit with a stop at the Visitor Centre to see a timeline in situ. Pupils were able to see the various stages of the Bridge build, helping them visualise the kind of timeline they wanted to put together back at school.

"It was really fascinating to see the size of the bolts and the views." Antony, Year 4

"It was awesome because everything beneath the bridge looked tiny and the people looked miniature." Cameron, Year 4

Year 5 Tour Guides:

Year 5 started their visit with a discussion of what pupils felt the role of a tour guide might be and how it would be important to their school museum. Some temporary exhibition boards were displayed to give pupils an example of how to communicate with their audiences. Pupils and teachers decided that they wanted to produce a leaflet for their school museum.

Pupils were issued with a worksheet that would allow them to highlight an area on the bridge with a corresponding fact to create their own personalised guided tour. Following the tour, the year group joined back together and suggested their Five Favourite Facts and the CSBT tour guides then used prompt packs to expand on these.

The structure of the Year 5 visit gave pupils the chance to see their allocated role (Tour Guides) in action, allowing them to not only learn new facts about Brunel and the Bridge but also observe and engage with their tour guide – bringing history to life.

Year 6 Engineers:

During their visit to the Bridge, pupils from Year 6 met with Research Engineer Alison Turner who explained the role of the engineer and introduced the four main types of bridges (beam, arch, truss and suspension). Following this, the pupils undertook a technical tour of the bridge, exploring the main components (saddles, chains, towers, hangers, deck and foundations), discussing the design and purpose of each part and making reference notes about them on a worksheet.

In school, the pupils again worked with Alison Turner on a half day newspaper bridge building challenge, working in groups to span a 1 metre 'gorge'. The groups first had to come up with three bridge designs and select a favourite for construction. They were allowed to purchase newspaper, string, masking tape and art straws to create their design, with the constructions being judged to the original criteria of the Clifton Suspension Bridge: strength, cost and appearance.

During the build, teams were interviewed by Year 3 pupils about their projects and what their expectations of their final results would be.

"Today we had an amazing time. In the morning it was our bridge building challenge. We had to use newspaper, string, straws and tape to build a bridge that could hold lots of weight and that looked good too. In the afternoon we made some artistic sketches of the Clifton Suspension Bridge." Year 6 pupil

"We had a great time today being reporters, reporting about year 6 and their Bridge Building Challenge. They could only use newspaper, straws and tape. In the afternoon, we had a go too. It was really difficult. John, Trey, Joseph and Jake managed to make one though!" Year 3 pupil

Outcomes

In total, 347 children were involved in the project, with 643 instances of engagement through object sessions, bridge workshops and the bridge building challenge. The museums opened at 2.00pm on Friday 6th and attracted families, representatives from CSBT and local councillors.

Clifton Suspension Bridge Trust

The staff of Clifton Suspension Bridge used 'Brunel Week' as an opportunity to develop and trial new resources for a Primary audience, this being the first time that worksheets had been employed during bridge tours, the first time that introductory sessions had been used on visits (meaning a reduction in time outside for pupils during poor weather) and the first time that focussed and bespoke tours had been employed in this setting (e.g.: subject matters from history and art to science and work experience).

Staff felt that the new introductory sessions gave pupils a focus for their visit and made expectations clear as everyone knew what they were going to achieve and how it would be done. The opportunity to do this within a venue (following a move to new premises) meant that pupils were able to sit comfortably in a quiet space and listen without getting cold, wet or distracted.

Additionally, the worksheets distributed for each session gave the pupils a point of focus as they were challenged to find the answers to questions and had to listen in order to gather information. The sheets also helped to keep sessions on task, as pupils were keen to complete all challenges within the allocated timespan.

Two activities which worked particularly well with the groups were judging the entries to the bridge design competition (Year 3) and the discussions on the properties of objects (Year 1 and 2). Both activities gave pupils the opportunity to share personal opinions with the class and make choices as a group.

The traffic survey, originally designed as an individual activity for Year 1-2 pupils, was found to work much better as a group activity with a nominated pupil recording people and vehicles on behalf of the class.

'Brunel Week' also meant the development of new outreach sessions and activities which can be delivered in sessions ranging from 30 to 60 minutes, and giving pupils a sense of the social and architectural history of the bridge within a classroom setting. It was also the first time CSBT has run the newspaper bridge building challenge, which worked well as an activity but must adhere to a strict timescale as individual testing and judging was more time consuming than first thought as some bridges held a great deal of weight.

Some problems were experienced in developing the role of the Year 3 Reporters during the bridge building challenge whilst the Year 5 Tour Guides unexpectedly changed their activity from leading tours as suggested to creating a leaflet as their main focus. These problems could have been avoided had there been more

communication with individual class teachers during the planning process, rather than through a whole school representative.

It was found that some teachers were unclear on aspects of their visits or their activities even though these had been clearly outlined in the lesson plans circulated in advance of 'Brunel Week' and to avoid this, CSBT could have either made provision to sit down and talk with teachers individually – or done more to outline the structure of visits during the initial object handling sessions.

Perry Court Teaching Staff

Perry Court Pupils

The pupils engaged with the objects presented by CSBT and feedback suggests that they enjoyed being able to get up close to pieces of the bridge that aren't usually on display and finding out more about them. The 'mystery object' (urea used to melt snow and ice on the bridge deck) was mentioned in many of their articles, reports and write-ups, and many of the children who visited the bridge asked if they could see it spread on the ground, showing that they remembered both its purpose and usage.

A number of the pupils expressed fear or concern about crossing the bridge at the beginning of their visit – but all were able to make the crossing without incident, showing that once they became involved in the discussions and activities, they had put this concern from their minds. Many of the children expressed amazement at the scale of the structure: both how high the towers were and how far above the river the bridge deck was and asked technical questions without prompt ("what does this bit do?", "what is this for?", "why is this piece made from this material?").

At the opening of the museum, pupils were excited to show family and friends the pieces they had created, but were also working hard to explain how and why work had been done and directing visitors to other exhibits. Year 4 pupils had created a souvenir stand selling bookmarks, keyrings, badges and magnets and a refreshment stall selling chocolate top hats. Year 5 had created a blog documenting the experience and the Infants had created a Great Western Railway from lollipop sticks that ran all the way around their assembly hall.

"Friday was the opening of our Brunel museum, Brunel was even there to welcome us in! I'm sure you will agree the displays and exhibits look amazing. All the children of Perry Court enjoyed putting it together, and all of the teachers worked very hard."
Year 5 pupil

"The work that has been produced during the week is high quality and possibly surpasses Brunel's in its design!" Mrs Osbourne