

Bridges & Railways KS2

Teacher's Notes: The Building Bridges session is designed to support your group's learning and understanding of Design and Technology. Your visit combines cross curricular learning opportunities with a visit to a period railway station.

Our learning activities cover a wide range of themes from the technology curriculum. They feature hands on activities and the chance to explore the station, engine yard and the bridge used in the filming of Harry Potter. They are designed to encourage planning, design and test and team work skills. The activity session outlines are set out below. You will be met on arrival by one of our Education Department staff, who will lead your visit and provide a safety briefing.

Duration & Timings: Your led sessions require a minimum of a 2 hour station visit. You are welcome to extend your visit with a lunch break and self led activities on the station site. Start times from 10am. Available at: Ropley, Alresford or Medstead & Four Marks stations. Bookable all year round.

Activities: The content of your tour will reflect your chosen station and are designed to provide background knowledge for the bridge building activity. Trips located at Ropley include a visit to the King Cross Bridge display area and Engine Yard.

Themes covered during your tour:



I. Study of Bridge Construction. Identifying materials and techniques, and methods of strengthening and stiffening.

Your guide will identify the different materials and construction methods used on our bridges. You will be able to examine the footbridges from below and whilst crossing.

II. Evaluating past and present designs.

Your tour will allow plenty of time to sketch important features of the bridges. Your group can use their sketches for reference back in school and in their bridge building task. In the Education Room you can examine plans of modern Network Rail bridge at Alton, the Kings Cross bridge at Ropley and the Footbridge at Alresford and compare their design features.



III. Why did the Railway build bridges? This session encourages scientific, historical and geographical investigation. You will be taken to view a cutting and your guide will discuss why railways needed cuttings and embankments and how these resulted in the need for bridges. Your tour will take you over the station footbridge and you can investigate why it came to be located in the current positions. Your guide will discuss with your group the way Victorian passengers crossed the line and contrast this with the needs of today's visitors.

Putting what they have learnt into practice: Build a Bridge Competition.

In the Education Room your class will divide into small groups for a construction session. To support the design stage they will have engineering drawings of the Kings Cross and Alton station bridges. They will be provided with newspaper and card tubes for their initial construction and a choice of stiffening



materials to improve their design. They will plan, build and test their bridges and the skills of communication, evaluation and innovation will be encouraged. They will be helped to operate as a team to: *Plan: Assemble their components: Construct their bridge: Test and strengthen.* As a final event each group will present their design to the rest of the class. Their bridge is then tested using a self propelled model train.

Cross Curricular Links: Geography, Science, Technology, Art & Design, History



To Book: Please contact the Education Office for availability. Your date can be reserved with a £50 deposit.

Tailor made sessions: All our education sessions can be tailored to your curriculum. Please contact us to discuss your requirements.

Prices: A Station Visit, including education sessions £3.50 / student (Minimum £45)

Extras: Franked postcards to post and Watercress Line badges are available to order for your group.

Students requiring additional support: If you have students that require additional resources, differentiation or practical assistance please let us know and we will be happy to adapt your session to make it accessible to your whole group. Large print and 'Easy Read' copies of all text are available on request.

For more information contact the Education Department on 01962 733810. Email education@watercressline.co.uk