

Bridges

DT Theme: Bridges
(Structure unit)

Teaching focus: Bridges
Learning Lens: Structures
Class: Year 5

Previous Knowledge

Chairs (Y2) Castles (Y3)

Project Hook or 'Wow' memory

Visit stream and look at bridge and other ways to cross the water

Learning Steps

Key Knowledge

To explore ways in which pillars and beams are used to span gaps.

Early bridges were like a beam to span a gap. Pillars are used to support longer bridges. What modern materials are used to make bridges? Explore making bridges and pillars using paper and card.

To explore ways in which trusses can be used to strengthen bridges.

Engineers can build stronger bridges using truss sections made from a number of beams connected in different ways. The decks of these bridges usually run on top of or through the trusses. Look at different truss designs Children to build bridges with trusses

To explore ways in which arches are used to strengthen bridges

Arches help to spread the load by changing the direction of the compression forces caused by the weight of the bridge itself and the weight of the objects crossing it.

To understand how suspension bridges are able to span long distances.

suspension bridges are different to many other bridge designs because they spread out the weight of the bridge and the traffic crossing it in a different way designing and making suspension bridge models

To develop criteria and design a prototype bridge for a purpose.

to design and build a prototype for a new road bridge for a power station.

To analyse and evaluate products according to design criteria

How can we test to see if a prototype bridge design is any good? How will you test your prototype bridge?

Key skills

Design a bridge featuring a variety of different structures.

Use new and prior knowledge of structures and materials to build and reinforce a variety of structures.

Measure, mark and cut card and clay to create a range of structures.

Adapt, test and evaluate the final structures.

Key vocabulary

Bridges
Pillars
Engineers
Beams
Trusses
Arches
Compression forces
prototype

Final outcome
Bridge structures

Images/themes to support the planning process. Simple structures. Framework to support evaluation.

