



Unit of work
 Bridges

Year group: 3

Prior learning

- Experience of using construction kits to build walls, towers and frameworks.
- Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card.
- Experience of different methods of joining card and paper.

National Curriculum

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

Knowledge

- To be able to name understand about Brunel's life and link this to the industrial revolution
- To be able to name and explain the purpose of: junior hacksaws, bench hooks, G-clamps, hand drills, drill bits, safety goggles and glue guns.
- To be able to name a range of materials such as: paper straws, plywood, wooden dowel, grey board and elastic bands
- To be able to explain how to work safe using DT equipment
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in products.

Skills

- To be able to design a purposeful product based on a design brief
- To be able to select from a range of tools
- To be able to cut accurately and safely
- To be able to create a mock-up and suggest improvements
- To be able to make a product based on a design brief
- To be able to test and evaluate against the design brief.

Vocabulary and definitions

| Word | Definition |
|--------------|---|
| forces | force is the push or pull on an object with mass that causes it to change velocity |
| arch | a curved symmetrical structure spanning an opening and typically supporting the weight of a bridge, roof, or wall above it. |
| Swing bridge | a bridge over water that can be rotated horizontally to allow ships through. |
| levers | a rigid bar resting on a pivot, used to move a heavy or firmly fixed load with one end. |
| mock-up | a model or replica of a machine or structure |
| linkages | joining one or materials together |
| joining | link; connect. |
| materials | the matter from which a thing is or can be made |
| stronger | powerful and difficult to resist |

Significant people: Isambard Kingdom Brunel



Brunel was one of the most versatile and audacious engineers of the 19th century, responsible for the design of tunnels, bridges, railway lines and ships.

