

Knaphill Lower School – What are the best materials for construction?

Focus subjects: Science, History and DT

Year Group: 1

Term: Spring 1

What do I already know?

- Everything around us is made from different things.
- Most people have five senses which are touch, sight, hearing, smell and taste.
- I can notice differences and similarities between objects.
- Bridges are used to get across something and can be used by different forms of transport.

What will I know by the end of the topic?

What is a material?	Materials are used to make or build objects. Some materials we will be learning about are wood, plastic, glass, metal, water and rock.
What is the difference between a material and an object?	An object is a physical item. Items can be made of many different materials depending on their purpose.
Why are objects made from certain materials?	Objects are made from materials which have suitable properties for their purpose.
What physical properties do materials have?	Materials can be hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, transparent/opaque.
How can you organise materials into groups?	By checking the physical properties of materials and grouping the ones that are similar.
Who was Isambard Kingdom Brunel?	He was an English engineer who was famous for building structures.
Why was Isambard Kingdom Brunel significant?	He designed and built many things but we are going to focus on his bridge designs, the materials he used and the properties of these.
Which design and materials are best for a model bridge?	We are going to work on investigating a range of materials and creating a bridge design that will hold the weight of 2 toy cars.
How will my bridge stay together?	We will be selecting and using a range of joining resources such as glue and tape.
How will I improve my bridge?	We will test our bridges, make any necessary amendments and think of ways to improve our design.

Key Information

Science

- There is a difference between an object and the material it is made from.

Object: Table



Material: Wood

Object: Chair



Material: Plastic and Metal

- Materials can have more than one property.

History

- Isambard Kingdom Brunel was born about 200 years ago.
- He was born in England and studied to be an engineer.
- He is famous for designing and building bridges, but he also worked on tunnels, railway stations and ships.

DT

- Bridges can be made in lots of different ways and for different purposes.



Vocabulary

Object	A physical item or thing.
Properties	What a material is like.
Engineer	A person who designs, builds or maintains engines, machines or structures.
Structure	A building or other object constructed from several parts.
Design	A plan or drawing produced to show the look or function of a building or other object before it is made.
Evaluate	Assess the design for purpose and deciding on if and how it could be improved.
Construction	To build something.