Year 2 Design Technology: Great Fire of London Fire Fighting Structure Knowledge Organiser

Let Me Introduce You To...

Sir Christopher Wren

Christopher Wren was a famous architect, who helped to design and rebuild 55 churches in London after the Great Fire of London in 1666. His masterpiece was St Paul's Cathedral.

Key Knowledge

Buildings and The Great Fire of London

400 streets, 13,200 houses, 87 churches, and 44 livery halls were destroyed by the fire between the 2nd – 5th September, 1666, in the Great Fire of London.

Many of the City of London's most iconic buildings were consumed: St Paul's Cathedral, the Royal Exchange, Newgate Prison and Christ's Hospital.

The fire spread quickly because the buildings were made of wood. The buildings were built very close together and it had also been a long, hot summer and the wooden buildings were very dry. The wind was strong which fanned the flames to nearby buildings.

Prior Knowledge

What should I know already?

I should have experience of:

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

Key Skills

Design

- design purposeful products for myself or other users.
- generate and communicate ideas through talking and drawing.

Make

- select from and use a range of tools.
- select from and use a wide range of materials.

Evaluate

- explore and evaluate a range of existing products.
- evaluate ideas and products against design criteria.

Technical knowledge

- build structures, exploring how they can be made stronger and more stable.

Project: What makes a building stable and strong?

This half term you will learn:

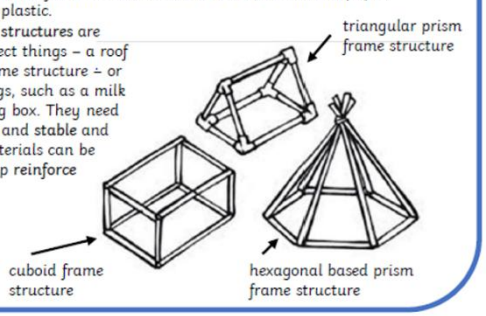
- how to turn 2D nets into 3D structures;
- that the shape of materials can be changed to improve their strength and stiffness;
- to identify when a structure is more or less stable than another;
- which structures are the most stable;
- how to make a stable structure using card/paper, tape, glue etc;
- how to create a frame structure for support;
- how to create a cladding design to improve appearance and meet design criteria;
- to compare the stability of different 3D shapes;
- to test the strength of own structures;
- to evaluate the strength, stability and stiffness of your own structure.

Technical Knowledge

Frame Structures

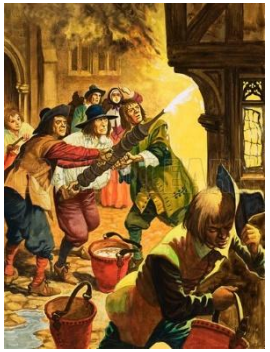
There are different ways you can assemble frame structures. They could be made from materials such as wood, cardboard, paper, metal or plastic.

Some frame structures are used to protect things – a roof can be a frame structure – or to hold things, such as a milk carton or egg box. They need to be strong and stable and different materials can be added to help reinforce them.

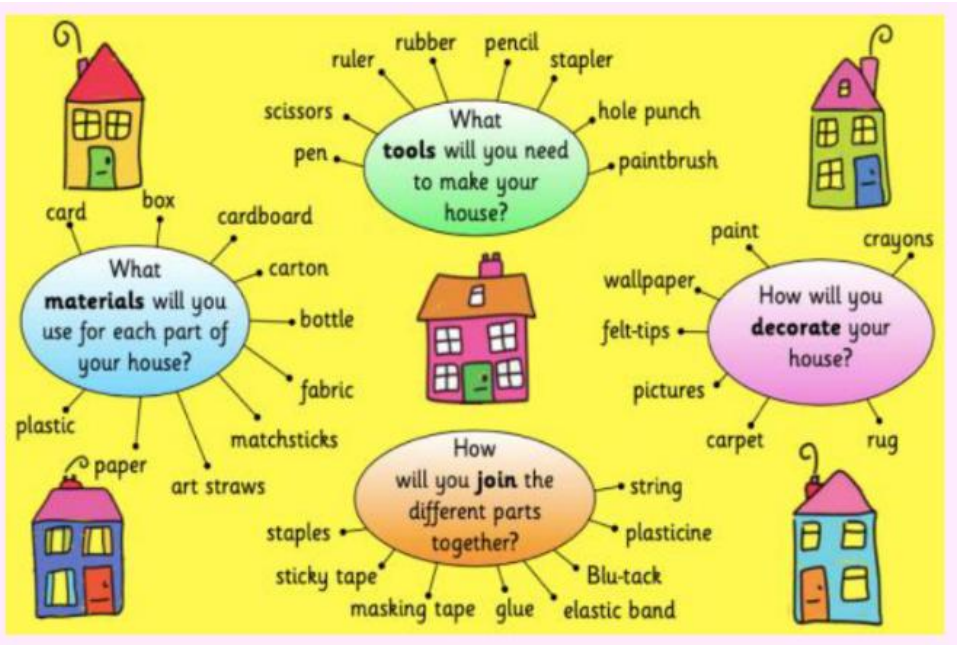


Key Vocabulary

Word	Definition
frame structure	building the inside supports first of something and then adding an outside covering
reinforce	to make something stronger
stable	something that does not fall over easily
cladding	a material put on top of something else to protect it or make it look better
structure	something that has been made and put together and can stand on its own
function	the purpose of an object
architect	a person who designs buildings
material	the matter from which a thing is made



Function	How something works.
Man-made	Made by people.
Mould	To form different shapes out of soft, squishy materials.
Natural	Found in nature e.g. spider's web, sheep's wool.
Stable	Object does not easily topple over.
Stiff	A material or object that does not bend easily (e.g. wood).
Strong	Something that is not easily broken (e.g. wood, brick, building).
Structure	Something that has been made and put together and can usually stand on its own (e.g. a building, a bridge, a chair).
Test	To find out whether something works as it should.
Weak	Something that is easily broken (e.g. paper, egg shells).

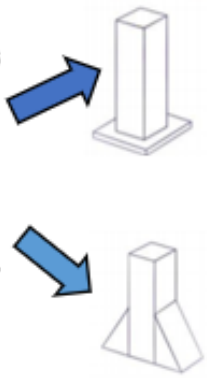


Information linked to learning

Buttresses can also make a structure more **stable**. A buttress is something that is built against a structure to give it more stability.
A structure that is strong and rigid is able to support more weight.

Structures are more stable when they have a **wider base**.

The buttress adds width to the base, making the structure more stable.



Key Figures/ skills/ dates

Some materials are stronger and more rigid (stiffer) than others, e.g. card is stronger and more rigid than paper.

Structures can also be made stronger and more rigid by making sure that parts and materials are properly joined together, e.g. with glue or tape.

Folding and layering (adding an extra layer) of materials can also be used to strengthen and stiffen structures.

Health and Safety

-Remove any jewellery and tie back long hair.

-Walk safely and calmly around the classroom/ workshop.

-Follow the teacher's cutting instructions carefully.

-If you need to move around with scissors, hold around the closed blades, facing down.

-Report any accidents & clean up properly after yourself.