

Prior Learning

In Year 1 the children learned about free standing structures and explored ways to create sturdy bases. In addition they have some basic understanding of how to reinforce and strengthen card/paper to provide support when using shell structures.

The children can:
 Explore simple products by disassembling them and embarking on research as to what products are currently on the market and they have understood the need to speak to the target audience to understand what the consumer needs.
 Create mood boards and simple diagrams such as an exploding diagram.
 Use paper, card, scissors, tape, construction kits, use tabs to help attach parts.



Techniques for building frame structures

Roll paper to make tubes for construction

Joining straws

Key Vocabulary

Compression – the application of pressure to squeeze an object.
Strut – a part of a structure under compression.
Tension – a force pulling on a material or structure.
Tie – a part of a structure under tension.
Triangulation – the use of triangular shapes to strengthen a structure.
Frame structure – a structure made from thin components e.g. tent frame.
Cross Sectional-a drawing that shows a cut- away portion of the object to show the inside/plane view of the 3D object.

- Intended Outcomes**
- To identify frame structures in the world and explain why they are used..
 - To explain how frame structures are created and what gives them strength.
 - To create frame structures from different materials and test their strength.
 - To design and make a frame structure suitable for the brief and specification given.
 - To carefully measure, cut, saw to ensure the dimensions are correct and use appropriate joining techniques.
 - To evaluate the effectiveness of the product by referring to the specification.

Frame Structures
 A Frame structure is a structure that combines beams, columns and slabs to resist heavy load.

Make small scale frame structures using straws, pipe cleaners and dowels.

Using straws

Joining thin sectioned pieces of wood

Understanding triangulation

Creating triangles for rigidity

More rigid

Useful Website and Hints

<https://www.youtube.com/watch?v=mBHJtWbsiaA>