

Subject: DT

Year group: 5

Term: Spring

Unit name: Structures- Frame structures

National curriculum- technical knowledge

- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures

Key vocabulary

frame structure	temporary
stiffen	permanent
strengthen	design brief
reinforce	design specification
triangulation	prototype
stability	annotated sketch
shape	purpose
join	user
functional	innovation
	research

Prior Knowledge –

- Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials.
- Basic understanding of what structures are and how they can be made stronger, stiffer and more stable.

Key Learning- what will the children know by the end of the unit?

To explore a range of existing portable and permanent structures (first hand or using secondary sources- making annotated drawings of their research and noting key features including how they have been made)

To understand some of the key events and individuals who have contributed to the development of structures.

To know how to use a construction kit consisting of plastic strips and paper fasteners to build 2-D frameworks (comparing the strength of square frameworks with triangular frameworks)

Explore how to use paper tubes an reinforced square frameworks to build 3D structures (made from rolling sheets of newspaper diagonally around pieces of e.g. dowel/to help develop an understanding of using triangulation to add strength to a structure)

To design a product for an intended user and purpose.

Children are able to use tools and equipment safely- junior hacksaws, G-clamps, bench hooks, square section wood, card triangles, hand drills

Children can accurately join framework materials together e.g. paper straws, square sectioned wood.

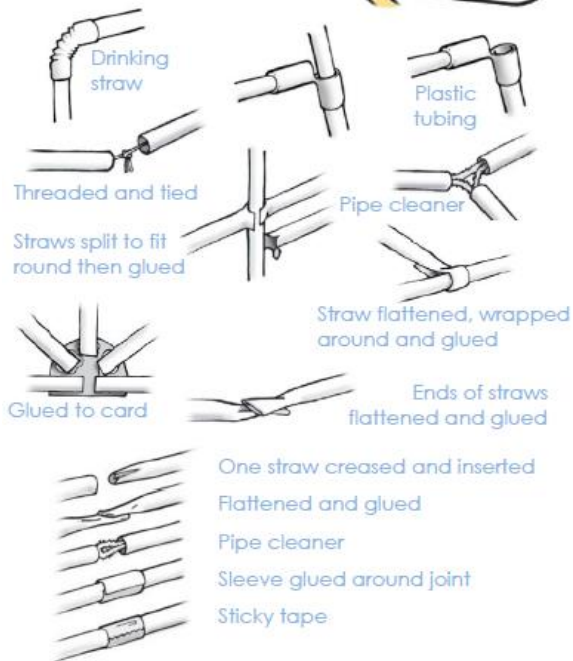
Techniques for building frame structures

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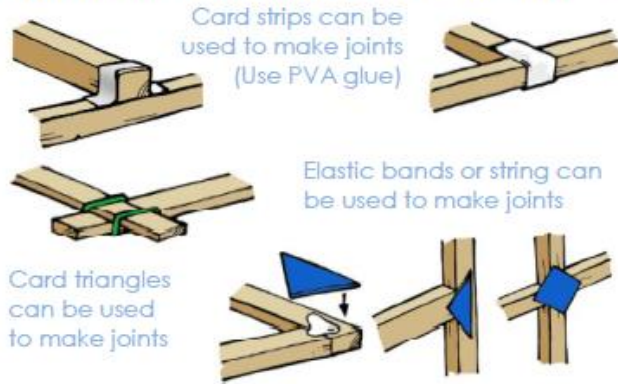


Roll paper to make tubes for construction

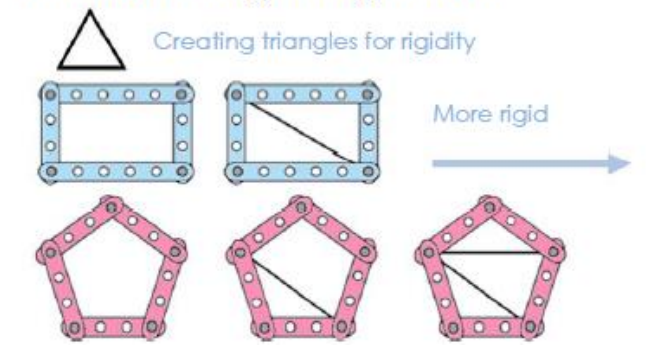
Joining straws



Joining thin sectioned pieces of wood

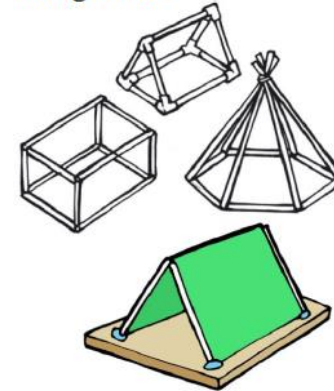


Understanding triangulation

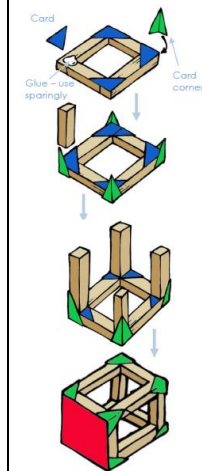


Making small scale frame structures

Using straws



Using square section wood



Design Process

Investigative and Evaluative Activities (IEAs)

Focused Tasks (FTs)

Design, Make and Evaluate Assignment (DMEA)