

Design Technology Subject Knowledge Bank

Year 4: 3D Structures

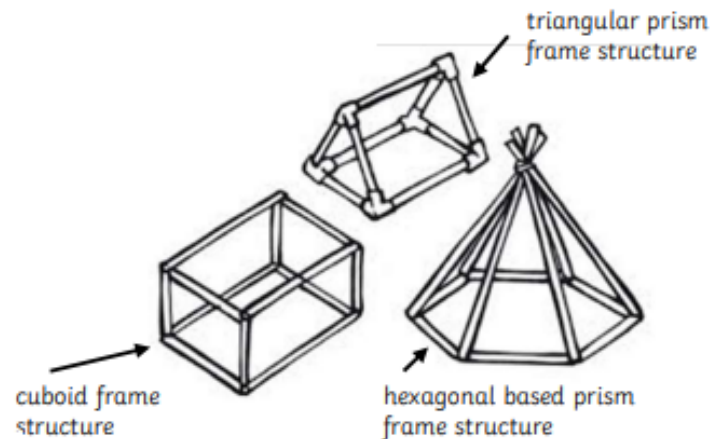
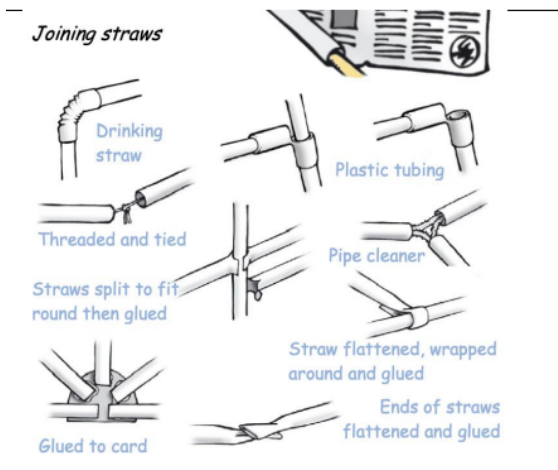
Vocabulary	Definition
Vertical	A line that is at right angles to the ground.
Horizontal	A line that is parallel to the ground.
Diagonal	A straight line joining two opposite corners of a square, rectangle, or other straight-sided shape.
Framework	A structure made from thin components.
Reinforce	To strengthen or support (an object or substance), especially with additional material.
Intended User	The person who the product is made for

Design brief

- Who is the intended user?
- What is the purpose of the frame structure?
- Will it be permanent, or can it be easily dismantled?
- What materials will you use?
- How will it be joined?
- How will it be reinforced?
- How will it be finished?

Trial and improvement

- How will you make it stable?
- How will it stand up?
- How could you make it stronger?
- Where are the weak points?
- How could you reinforce them?
- What tools and materials will you need?
- How can you improve the design?



Straight Joining:

1. The end of one straw is creased and inserted into the other straw. Glue if necessary.



2. Ends flattened and glued.



3. Sleeve made from straw. Glue if necessary.



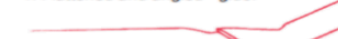
NOTE: It is possible to repair a buckled member of a structure by using method 3.

4. Pipecleaner insert.



Angled Joins:

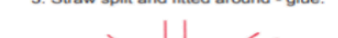
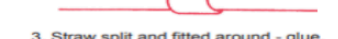
1. Flattened and angled - glue.



2. Straw flattened and wrapped round - glue.



3. Straw split and fitted around - glue.



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