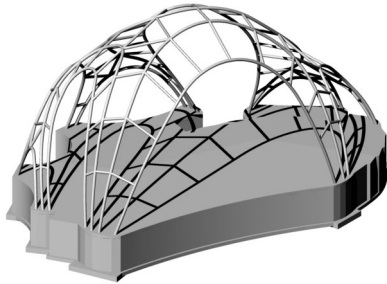


Year 3 Structures (shell structures)

Prior Learning: Experience of using different joining, cutting and finishing techniques with paper and card. A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science.

Facts: Experience of using different joining, cutting and finishing techniques with paper and card.

A shell structure is a hollow structure with a thin outer layer.



www.youtube.com/watch?v=fibXZFORyqM

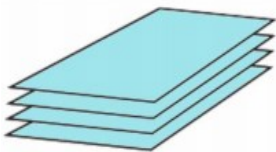


Vocabulary

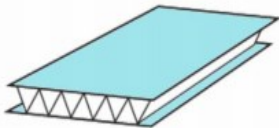
1. **Face** – a surface of a geometric shape.
2. **Net** – the flat or opened-out shape of an object such as a box.
3. **Prism** – a solid geometric shape with ends that are similar, equal and parallel.
4. **Vertex** – used to refer to the corners of a solid geometric shape, where edges meet.
5. **Scoring** – cutting a line or mark into sheet material to make it easier to fold.

Vocabulary	
LENGTH	WIDTH
NET	3D (DEMENTINIONAL)
VERTEX	LENGTH
WIDTH	SCORING
STRUCTURE	

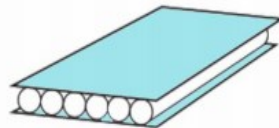
Stiffening and strengthening sheet materials.



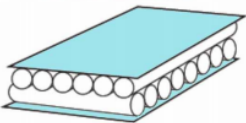
Laminating – glue together several layers of card



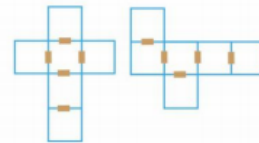
Corrugating – zig-zag a piece of paper or card and glue in between two layers of card .



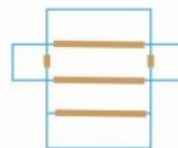
Ribbing – glue layers of straws between layers of card .



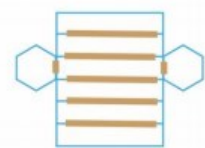
To assemble and evaluate 3-D shapes using standard sized card squares, rectangles, equilateral triangles, isosceles triangles and hexagons, joined with masking tape.



Nets for cubes



Cuboid net



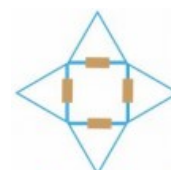
Hexagonal prism net



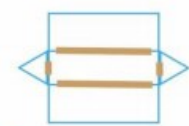
Tetrahedron net



Hexagonal based pyramid net



Square based pyramid net



Triangular prism net



Many building use shell structures such as the Shard and the O2 in London.



Job Opportunities:

- Architecture.
- Concrete shell architecture.
- Civil and structured engineer.