

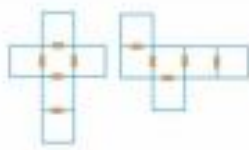
DT Collectable Shell Structures: Chocolate Boxes



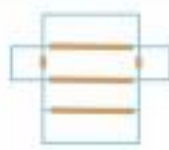
St Margaret's
Academy



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



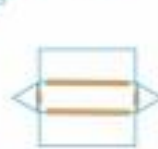
Tetrahedron net



Hexagonal based pyramid net

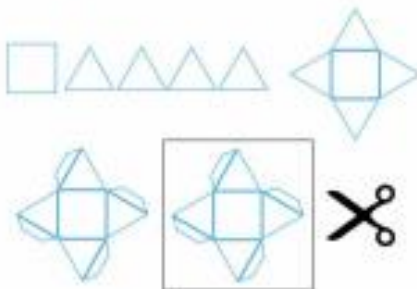


Square based pyramid net



Triangular prism net

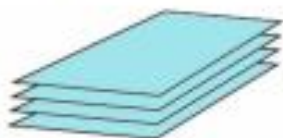
Creating the net for the product you are designing and making without using computer-aided design:



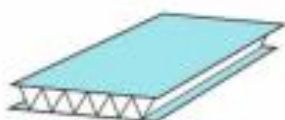
Draw the faces and stick them together

Add tabs, glue your paper net onto card and cut out

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



Designing, making and evaluating packaging for a gift for a family member

An iterative process is the relationship between a pupil's ideas and how they are communicated and clarified through activity. This is an example of how the iterative design and make process might be experienced by an individual pupil during this project:

THOUGHT	ACTION
What type of shell structure shall I make?	Discussing ideas, drawing annotated sketches, generating design criteria
What will be the purpose of my product? How will my product appeal to my intended user?	
Which materials will I use to make it?	Investigating and evaluating possible materials
Which shape will be the best for my structure? How will I stiffen and strengthen my structure?	Discussing, constructing and comparing different nets Exploring strengthening techniques Evaluating prototypes against success criteria
What graphics techniques will I use to achieve a desired visual effect and purpose?	
Will I work with someone else? How long will it take? What order will I work in? What tools, techniques and skills will I use?	Discussing, exploring, trialling and evaluating different graphics effects Negotiating, developing and agreeing a plan of action, evaluating actions
Do I need to adjust or change anything?	Discussing, trying out and modifying the design
Will my product meet the needs of the user?	Evaluating the product with the intended user and against the success criteria

Glossary

- Cuboid** - a solid body with rectangular sides.
- Edge** - where two surfaces meet at an angle.
- Face** - a surface of a geometric shape.
- Font** - a printer's term meaning the style of lettering being used.
- Net** - the flat or opened-out shape of an object such as a box.
- Prism** - a solid geometric shape with ends that are similar, equal and parallel.
- Scoring** - cutting a line or mark into sheet material to make it easier to fold.
- Shell structure** - a hollow structure with a thin outer covering.
- Vertex** - used to refer to the corners of a solid geometric shape, where edges meet.