

D&T: Helmets

analyse	Study something closely and carefully to understand it better.
corrugation	Shaping a material into waves or folds to make it stronger.
curved	When a shape bends and is not straight.
design brief	Description of the purpose and user of a product.
design criteria	The important features that a product must have or do to work correctly.
effective	Being able to make something happen or change something successfully.
hollow	Something that is empty inside.
iteration	The process of doing something over and over again.
shell structure	A hollow shape with a thin outer layer.
three dimensional	An object that is not flat; something that can be held and seen from all sides.

Helmets are used to protect the head and keep it safe from injury.

People wear helmets when riding bikes, playing some sports or working in dangerous places.




Papier-mâché is a form of layering materials by putting them on top of each other to **strengthen** them.



Fibreglass is a strong, lightweight material made by setting glass fibres in glue-like resin to make a hard shell.

Ways to strengthen a shell structure

Strengthening something is making a structure stronger so it can support more weight or resist forces like pushing or pulling.



Reinforced edges: fold or roll card strips and glue them around the rim.



Lamination: add more papier-mâché.



PVA and water sealant coat: apply a 50:50 mix of PVA and water.



Cross layering: apply new layers in different directions.



Hard outer shell: tape thin petal-shaped paper or card around the outside.



Internal support frame: place strips of card inside.



Lightweight fillers: fill in any holes with cotton wool or crumpled up paper.