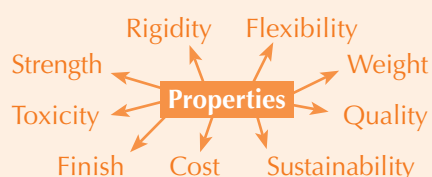


Section Four — Knowledge Organiser

Paper and board — they might *sound* like an obscure comedy double act, but really they're just two more materials that you need to be familiar with. Rest assured, this handy Knowledge Organiser has got all the key info covered...

Properties of Paper and Board



Different materials are suited to different uses, e.g.

Use	Properties	Materials
Card based food packaging	Printable, waterproof, airtight, strong, thick, retains heat	board with foil, duplex board, corrugated cardboard
Flyers and leaflets	Cheap, low gsm, eco-friendly, low quality	Biodegradable paper, unbleached paper

Paper/board can be **modified** with additives, e.g. to prevent moisture transfer. Modified paper/board is given **specific properties**, e.g.

- **Kraft paper**: tear-resistant, vapour barrier
- **Baking parchment**: non-stick
- **Greaseproof paper**: less absorbent
- **White board**: good for printing
- **Paper towels**: increased wet strength

Paper and board come in standard sizes, weights, thicknesses, colours and ply. Paper sizes: AO, A1, A2, ... (halving in size as the number increases).

Working with Paper and Board

Tool	Use
Scissors	Cutting paper and thin card
Metal cased knife	Cutting tougher materials
Plastic trimming knife	Cutting tougher materials, scoring materials
Scalpel	Precision cutting
Circle cutter	Cutting arcs/circles in card/paper
Perforation cutter	Making a line of lots of small cuts, e.g. for tear-strips
Guillotine/paper trimmer	Cutting large sheets of paper/card, lots at once
Laser cutter	Cutting intricate designs out of paper and card

Die cutters cut and crease paper/board to produce nets, stencils, etc. Sharp blades for cutting, round-edged blades for creasing.

Score paper/board to help fold neatly.

Standard Components

Ready-made components manufacturers buy to save time and money.

Fasteners

- Hook and loop fasteners
- Drawing pins
- Prong paper fasteners
- Treasury tags
- Staples
- Hooks

Book Bindings

- Comb binding
- Spiral binding
- Wiro binding
- Saddle stitching
- Perfect binding
- Thread sewing
- Case-bound/hard-bound

Seals, Tape and Adhesives

- Envelope seals
- Double-sided tape
- Tabs
- Glue sticks
- Spray adhesive



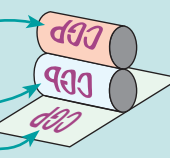
Printing Techniques

Flexography — flexible rubber/plastic printing plate (raised image).

Lithography/offset lithography — aluminium printing plate, UV light. Image area attracts oil-based ink but repels water.

Offset lithography:
Blanket cylinder squeezes away water and transfers ink to paper.

Image on aluminium printing plate gets printed onto rubber blanket cylinder...
...and transferred to paper.



Gravure — etched brass printing plate.

Screen printing — stencil and mesh screen.

Digital printing — inkjet/laser printer (CMYK).

CMYK colours: cyan, magenta, yellow and key (black).

Finishes

Finished products **look** better, and are **protected** from damage.

- **Laminating** — paper/thin card sealed in plastic.
- **Embossing** — material pressed with die to give raised impression.
- **Foil application** — metal foil printed onto parts of product.
- **Varnishing** — products made smooth and glossy or matt.

↓
UV varnishing — varnish cured under UV light, dry to touch.

Paper and board — learn the properties and the processes...

Paper and board are reasonably similar materials, so lots of tools, processes and standard components are suited to both. But they do have different properties, so they're used for different things.