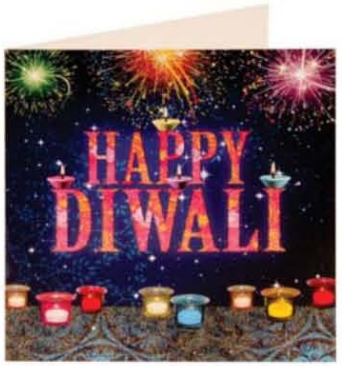
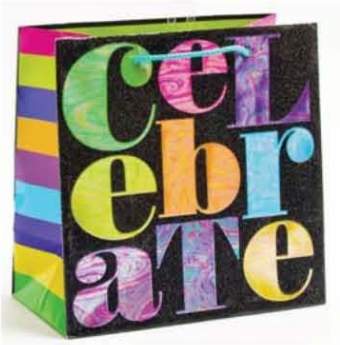
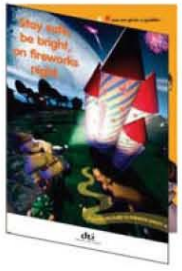
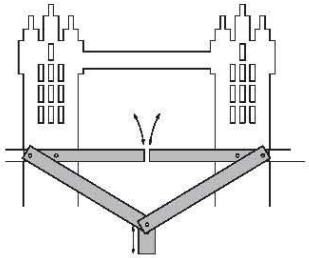
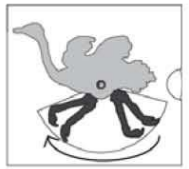
Promoting Firework Safety for Children



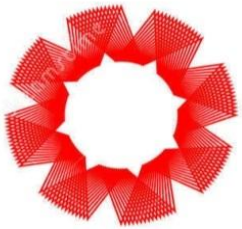


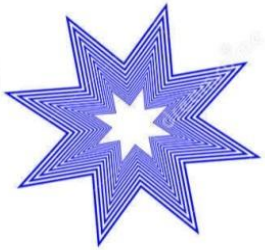


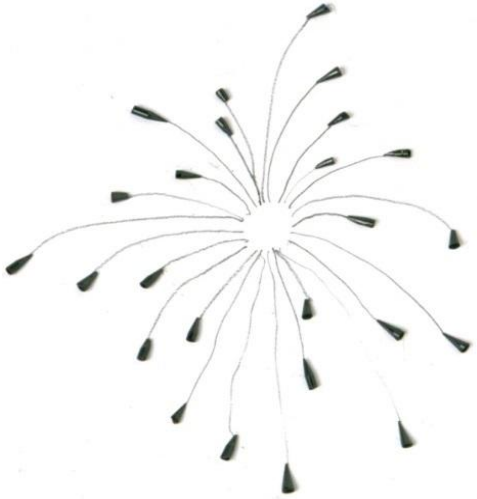


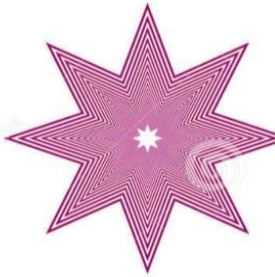


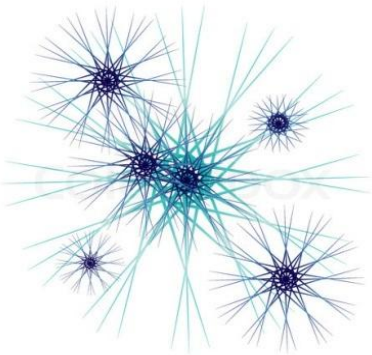
Firework Imagery





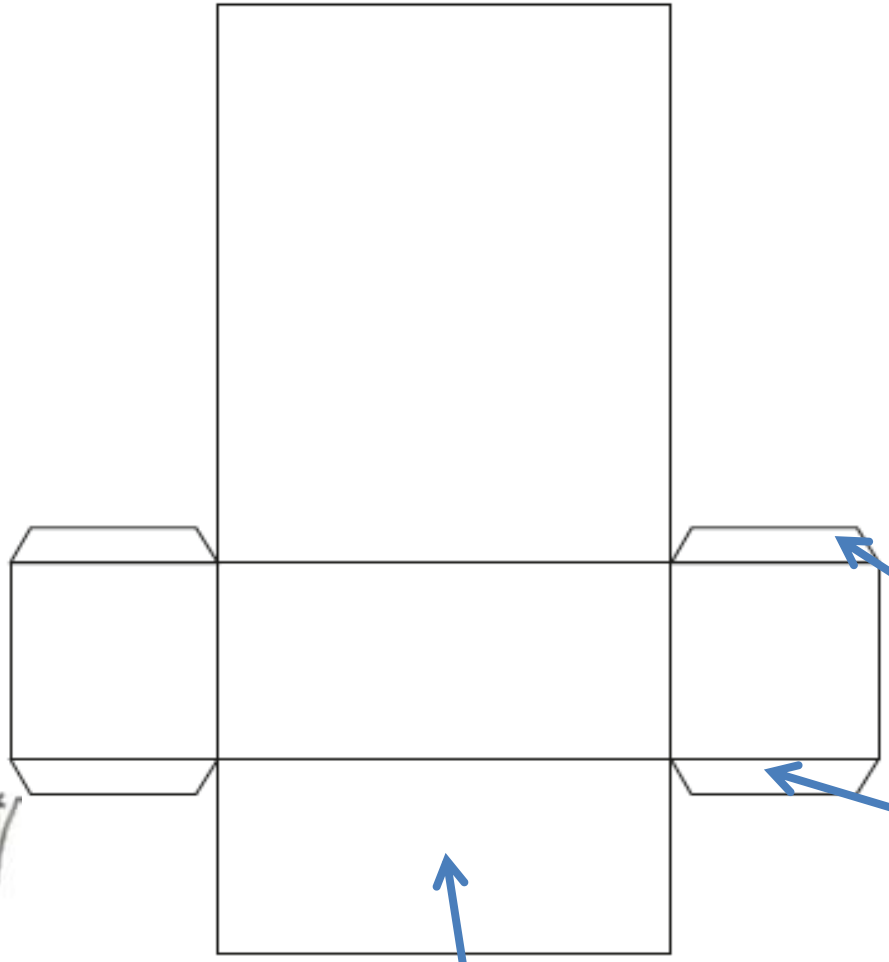






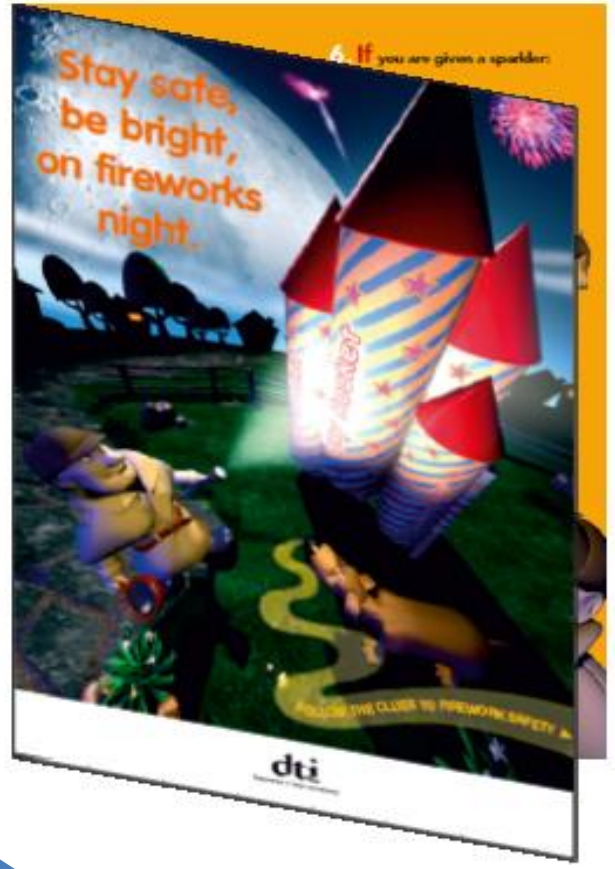
Basic Design

BASIC DEVELOPMENT / NET



Glue tabs

Duplex board

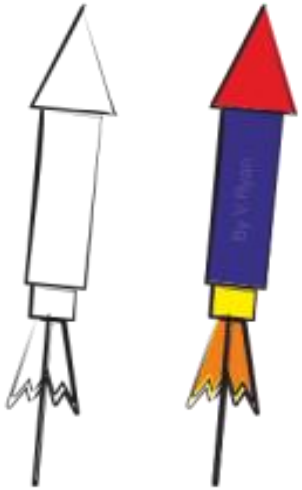


Design Development

The writing style is based on firework images. The title clearly states the nature of the leaflets - firework safety.

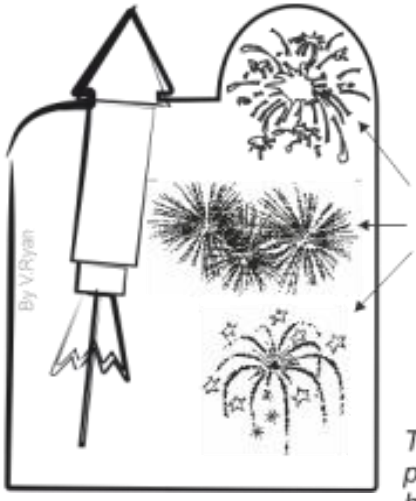
A decorative background will include a firework (in a prominent position).

'Firework bursts' will also be included, adding a range of colour, to attract the attention of the target market.



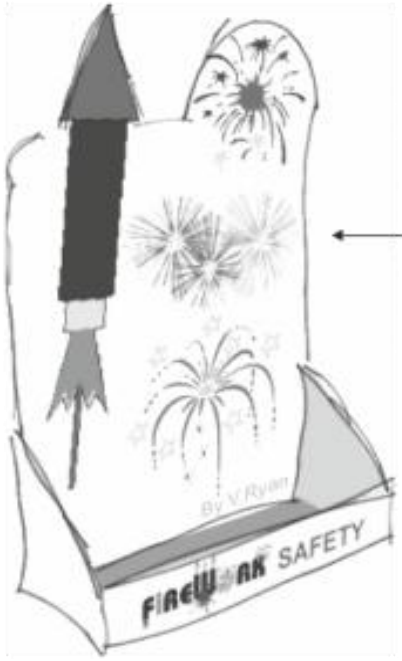
Basic design *Coloured version*

The basic layout of the background



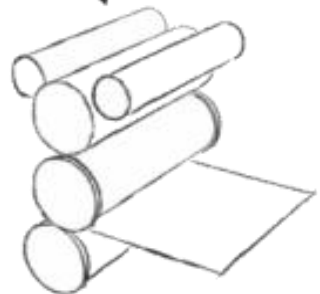
Firework bursts

Tabs will be glued in position, securely holding the display together.



The box quality card will have the images and colour scheme applied through lithography. This is a quick and relatively cheap way of applying colour on an industrial scale.

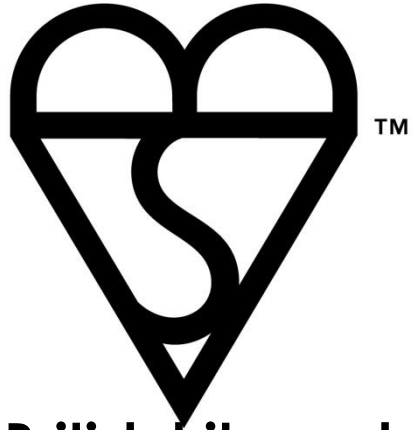
A steel Die Cutter is used to cut out the net of the display , ready for folding into the final shape/form.



Safety Symbols

CE mark. Conforms to European standards

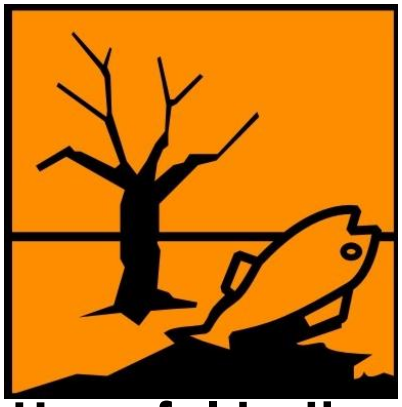
Age warning symbol



British kitemark. Shows that the product meets British safety standards.

Lion mark. Used on toys that conform, to the British toy and hobby association safety standards.

Explosive



Harmful to the environment

Toxic

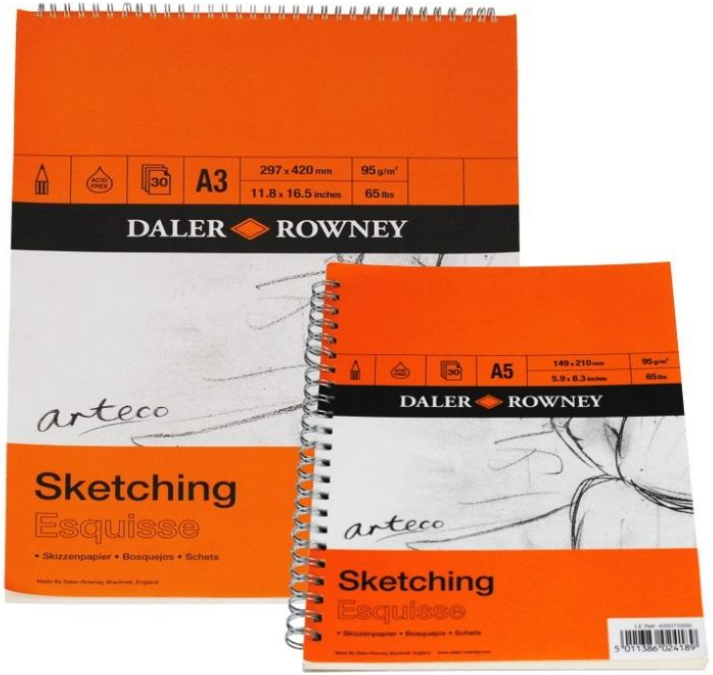
Flammable

Harmful / Irritant

Corrosive

Materials - Papers

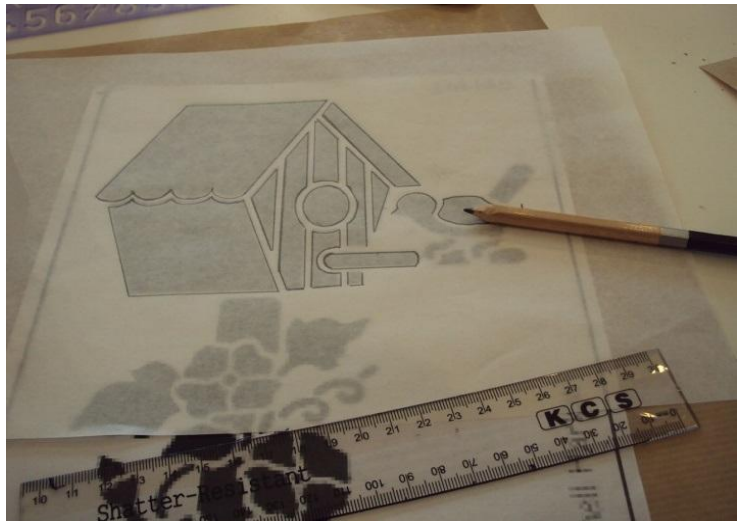
Cartridge paper
Has a textured surface. Used for drawinas.



Layout paper
A thin paper that can be used for drawing and tracing.

bleed proof paper
A good quality drawing paper, which stops pen colours from ‘bleeding’

Tracing paper
A translucent paper for copying by hand.



Materials - Card

grey board
It is thick and grey in colour and needs to be covered.

corrugated board
The fluted inner layer makes this rigid, yet lightweight.

Duplex board
Has a different colour / texture on each side.

mount board
Used for mounting pictures. It is coloured on one side

solid white board
High quality white card used for packaging.

Cartonboard
Cheap card used for packaging

Materials – Plastics 1

High Impact Polystyrene
Comes in colours or transparent.
Used for vacuum forming.

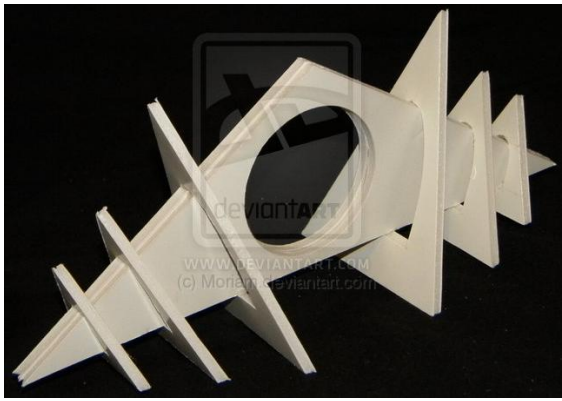
Polypropylene
Comes in opaque colours and translucent.
Used for injection moulding or for stationery when in sheet form

Acrylic
Comes in opaque colours, translucent and transparent colours.
Can be used for injection moulding or laser cutting when in flat sheets.

Materials – Plastics 2

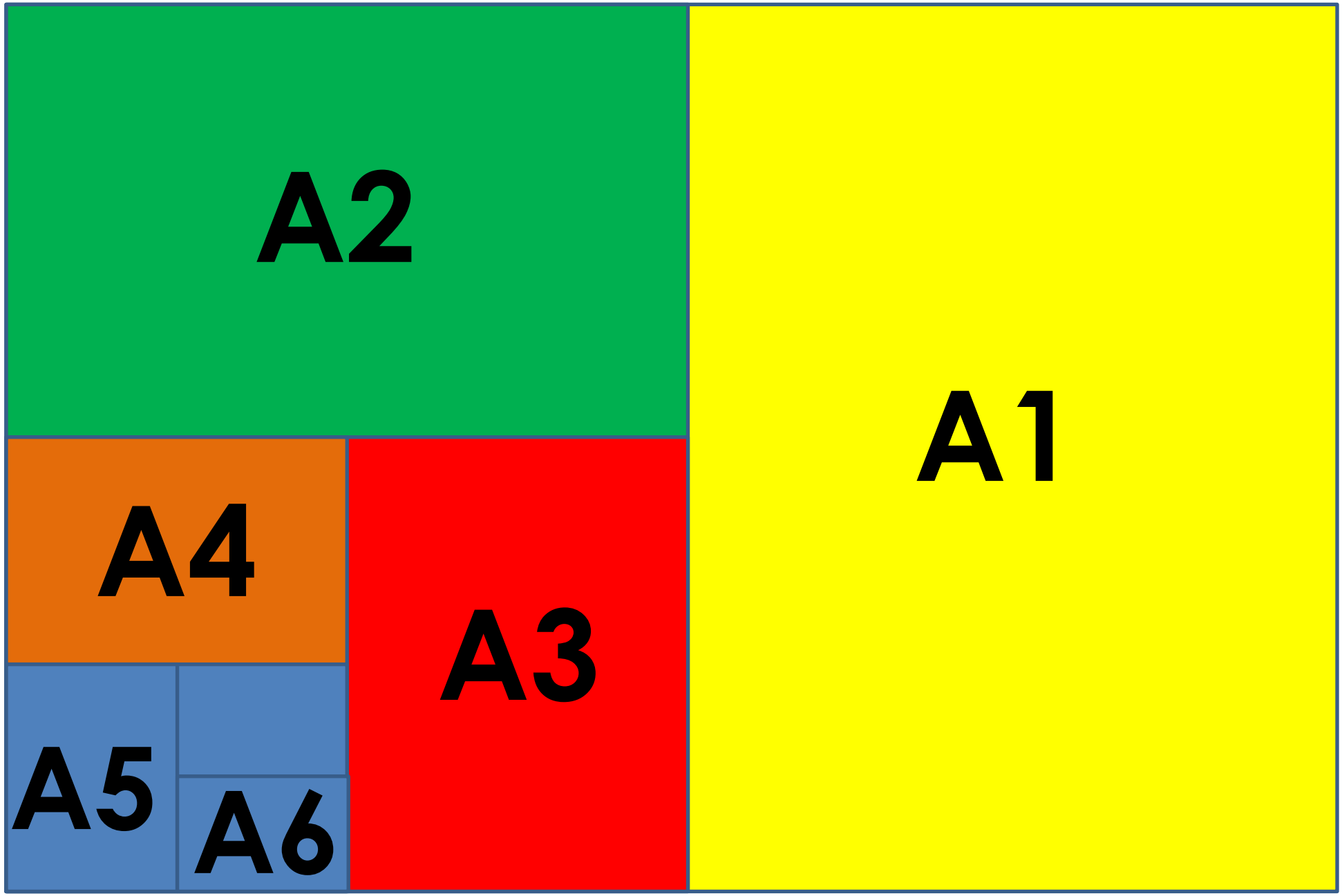
Corrugated plastic sheet
Used for signage and advertising displays due to its light weight. It is waterproof.

Block modelling foam
Used for modelmaking and to make prototypes

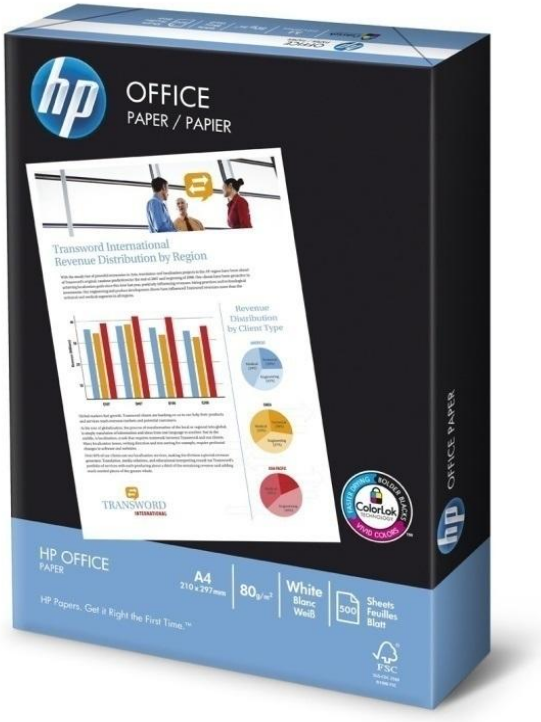


Foam Core
Used for mounting work for display and modelmaking. Has a printable paper surface.

Paper sizes



Paper and Board Thicknesses



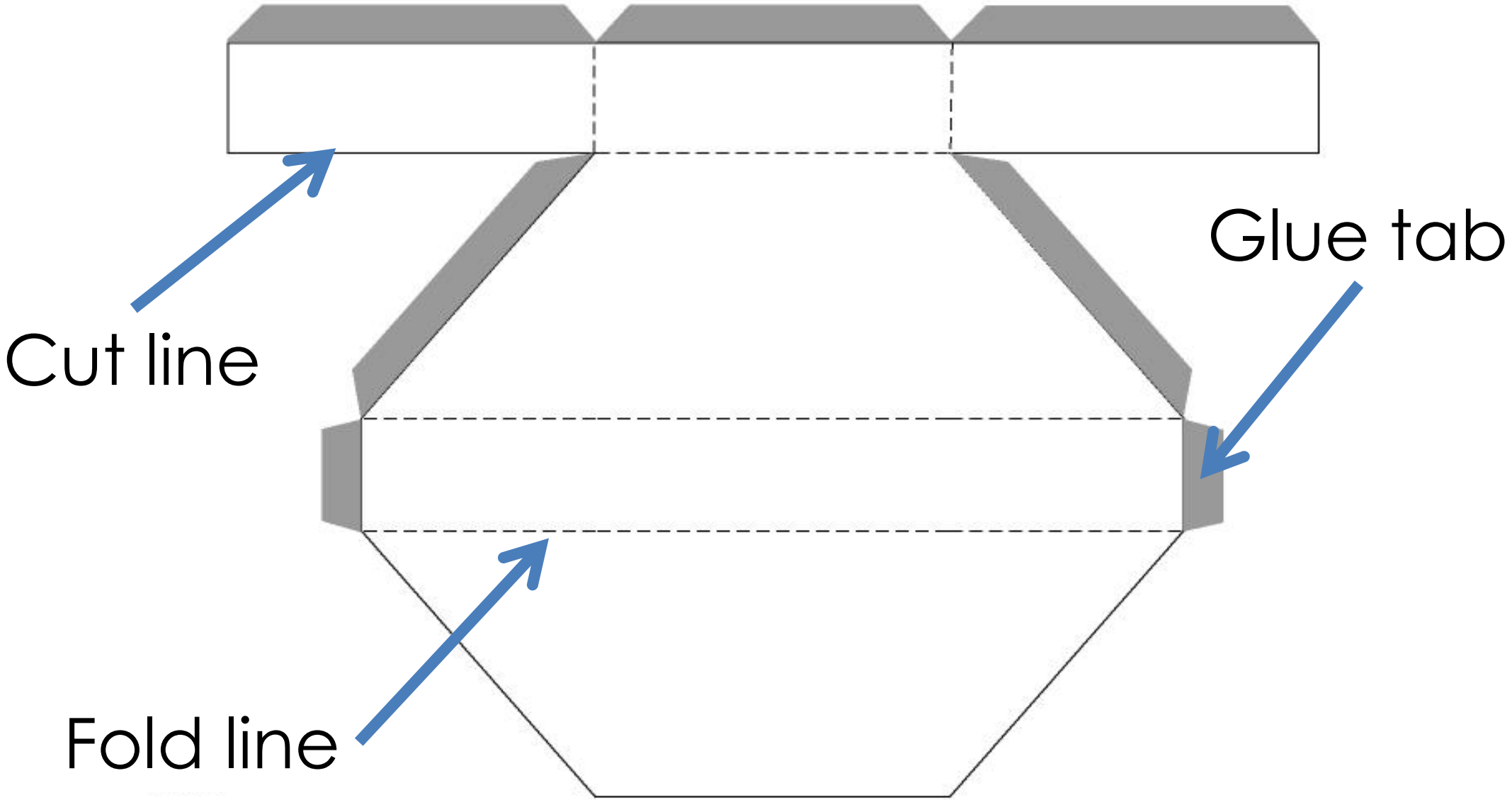
Printer Paper:
80-90 GSM
(Grams per
Square Metre)

**Cereal
Packaging:**
300 GSM

Jigsaw puzzle:
3000 microns

Spiral wound tubes

Nets



Parts of a packaging

Crash bottom

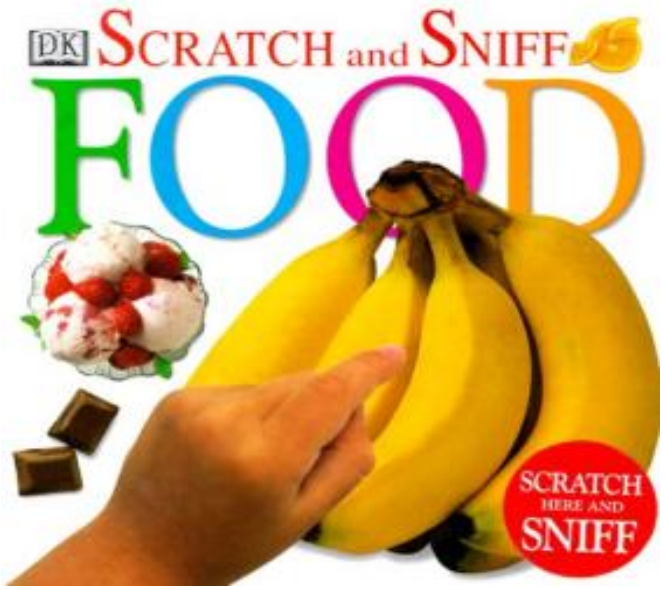
window

perforation

Euro hook

Smart and modern materials

Biodegradable Ink



Aroma Pigments

Sign in Daylight

Phosphorescent pigment

Hydrochromic Ink

Thermochromic pigment

Photochromic pigment

Designers

Alberto Alessi

Saffron

BT

olm

EL BAN CODE UNO

LITRO

AKZO NOBEL

orange

Aol.

Wally Olins

Robert Sabuda

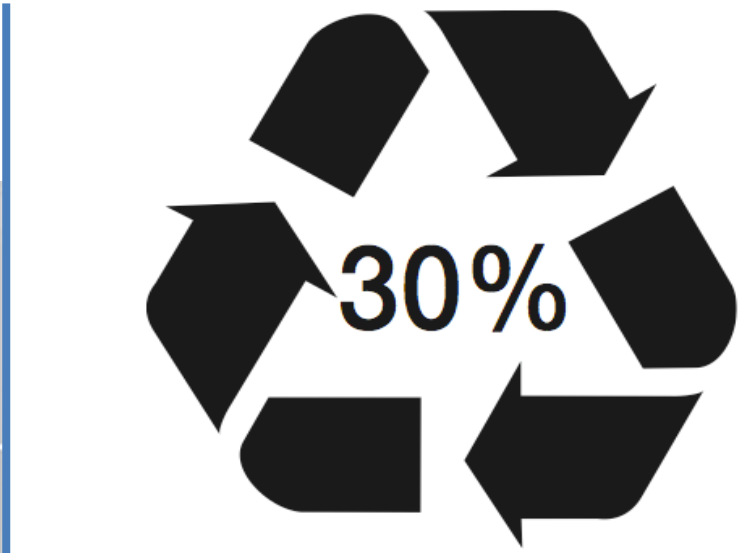
Jock Kinneir and Margaret Calvert

Harry Beck

6 Rs:

Reduce

Reuse



Recycle

Refuse

Rethink

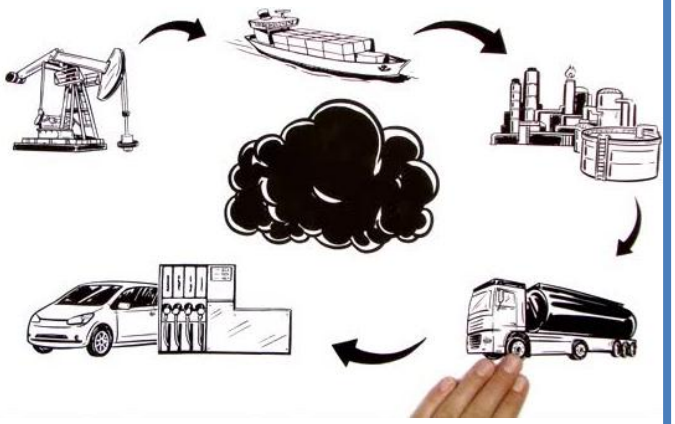
Repair

Sustainability

Carbon Footprint

This is the amount of carbon released into the atmosphere due to a product's energy use.

The carbon footprint comes from **energy used in materials extraction, production, transportation and use**.



Ethical Trading Initiative

The **ETI** is an alliance of companies, non-governmental organisations and trade unions.

Their aim is to promote and improve the implementation of regulated codes of practice that set out **minimum working conditions /pay /requirements** around the globe.

Built in Obsolescence

This is where products are designed to **fail or become obsolete within a short timeframe.** Companies do this to ensure that there is always a demand for their products.
This is also referred to as **planned or designed obsolescence.**

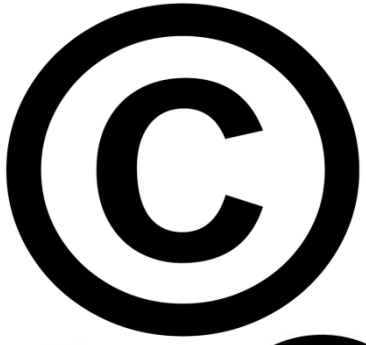
Carbon Offsetting

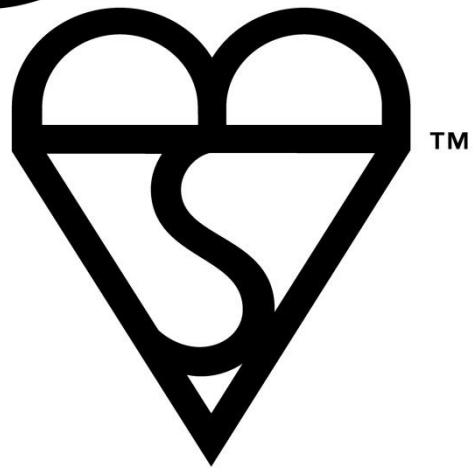
To reduce the footprint, you can use more **energy efficient or renewable sources.**

You could **offset** your carbon footprint by investing in renewables or forestry.

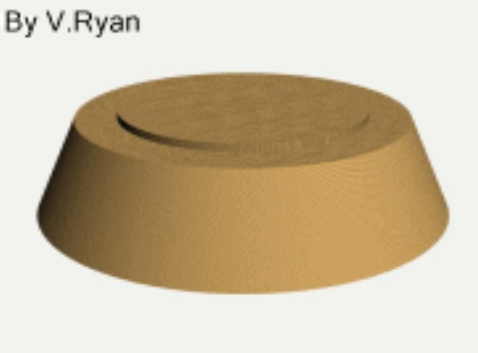
Sustainability:

Social, moral, cultural, economic and sustainability issues



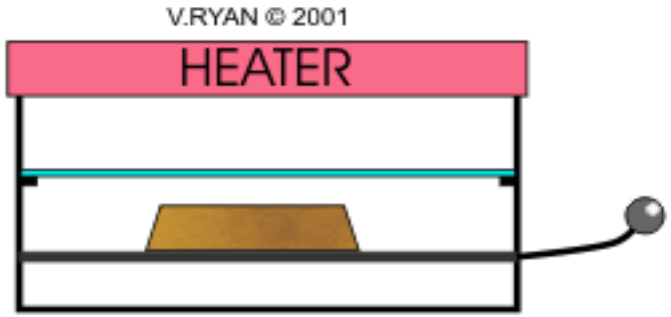


Vacuum Forming:



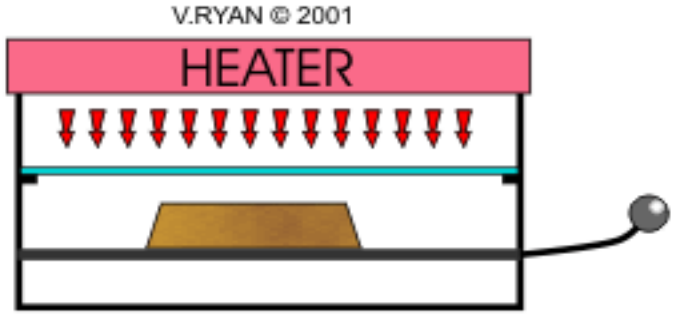
A **former** is made from a material such as a soft wood.

The edges or sides are shaped at an angle so that the **former** can be easily removed from the plastic.



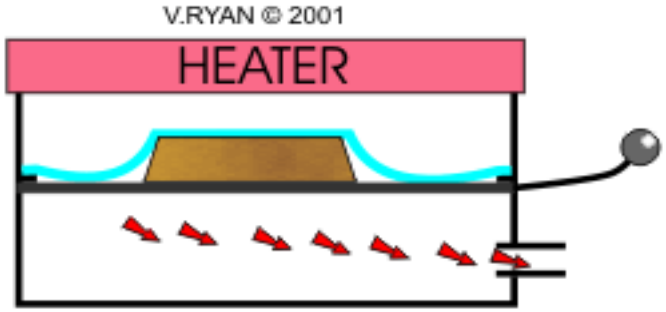
The mould is placed in the vacuum former.

A **thermoplastic** sheet is placed above the mould and clamped securely.

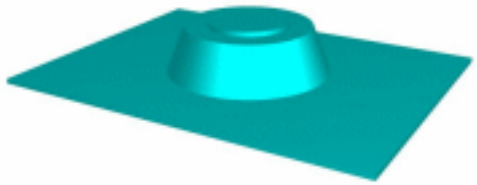


The electric heater is turned on to warm the **thermoplastic**.

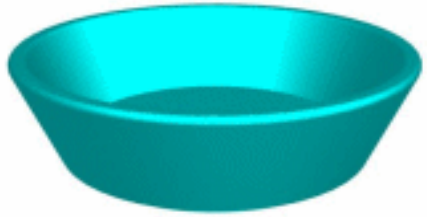
The plastic becomes **flexible** when heated.



The **former** is moved upwards and the air is pumped out of the area below the plastic.

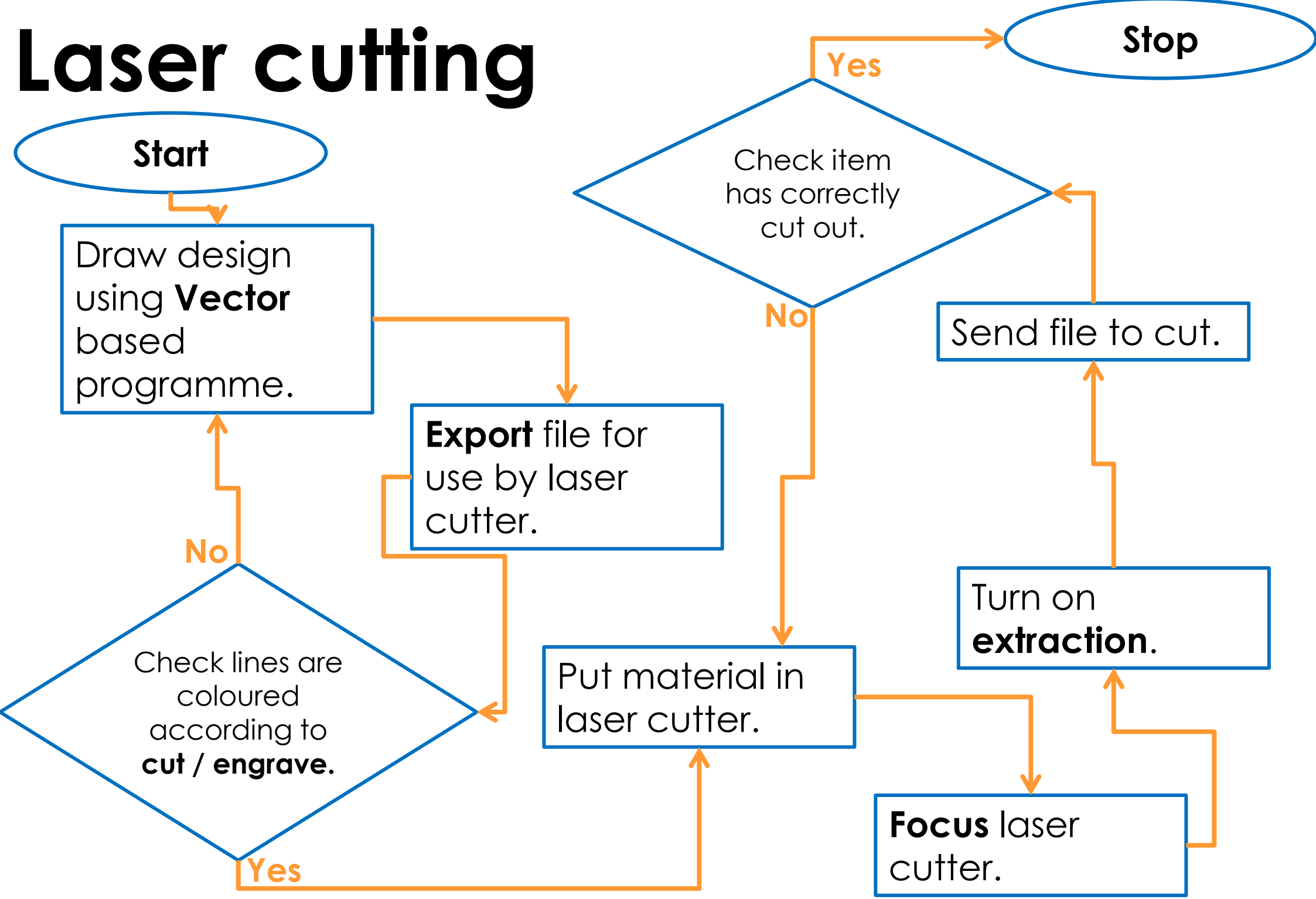


The plastic sheet is removed from the **vacuum former**. The sheet has the shape of the former pressed into its surface.



The excess plastic is trimmed so that only the plastic bowl remains - the completed item. An enlarged view of the final dish is seen opposite.

Laser cutting



Cutter Plotter

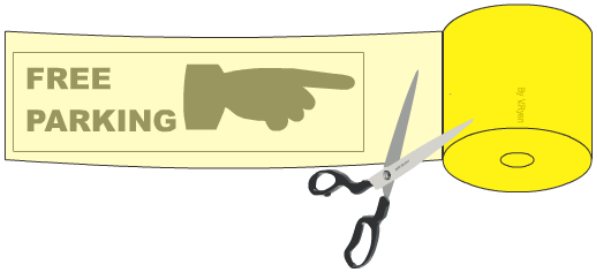
Stage 1: Design lettering and arrow using Computer-Aided Design (CAD) programme

Stage 2: Cut lettering and arrow using Computer-Aided Manufacturing (CAM)

Stage 3: Weeding (removing unwanted vinyl)

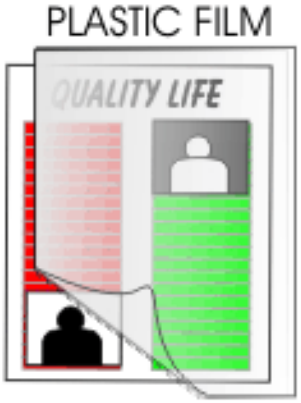
Stage 4: Use low tack film to lift the vinyl lettering and arrow off the backing film

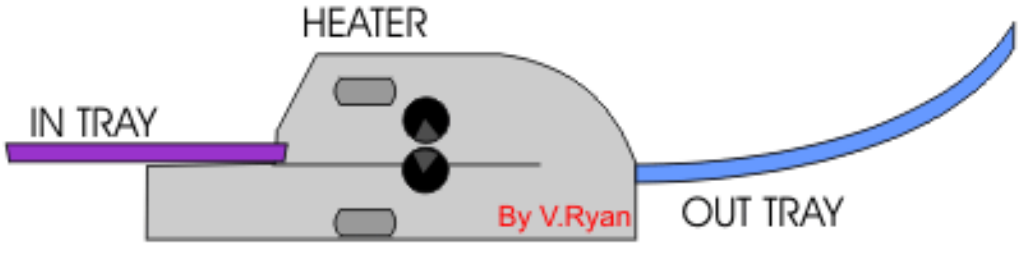
Stage 5: Position the lettering and arrow before removing the low tack film to reveal the final sign



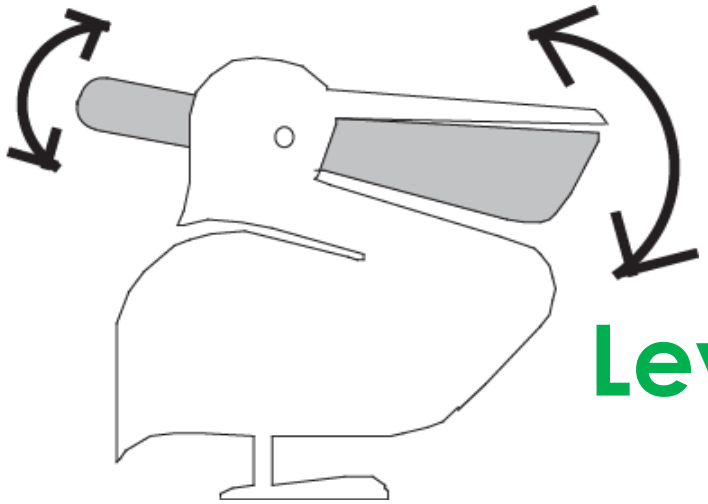
Encapsulation

Laminating paper or card between two layers of plastic.

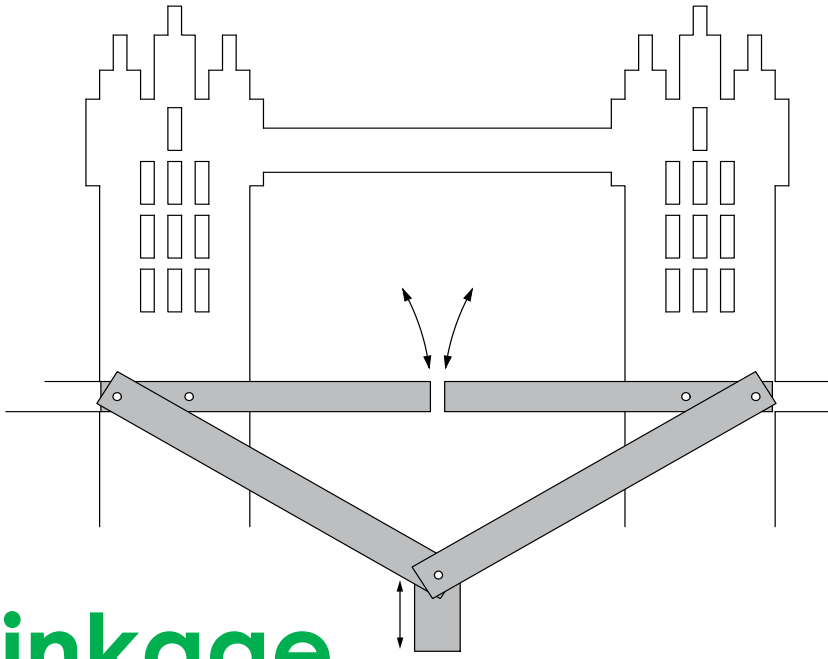




Mechanisms

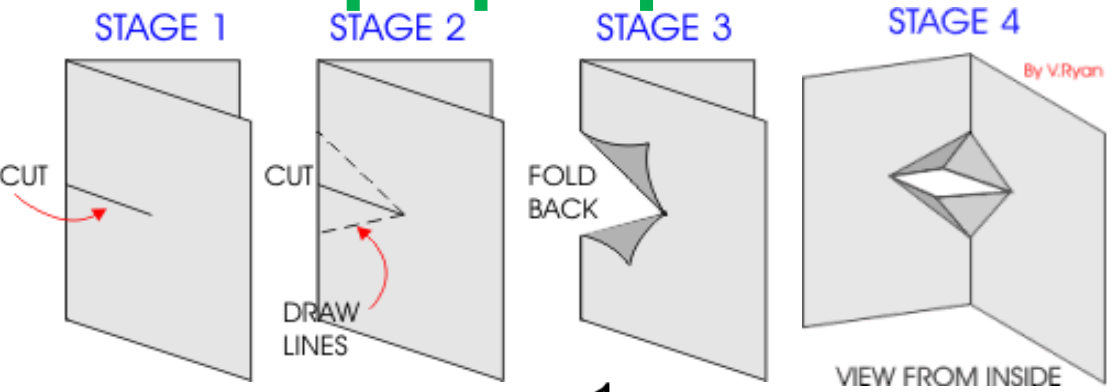


Lever

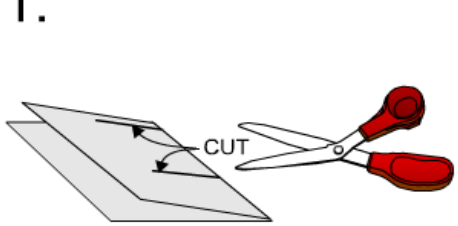


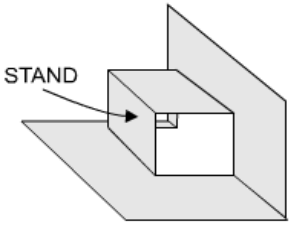
Linkage

V-fold pop-up

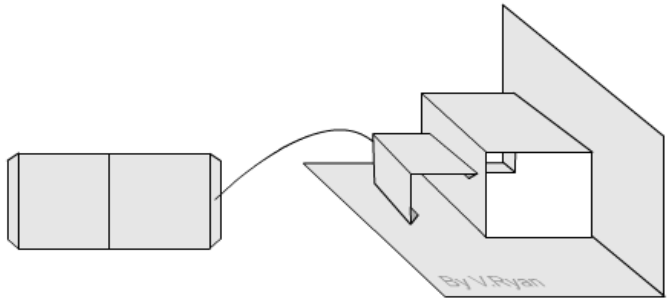


1.





2.



Internal stand pop up

Industrial Manufacture

Prototype

One-off production

Mass Production

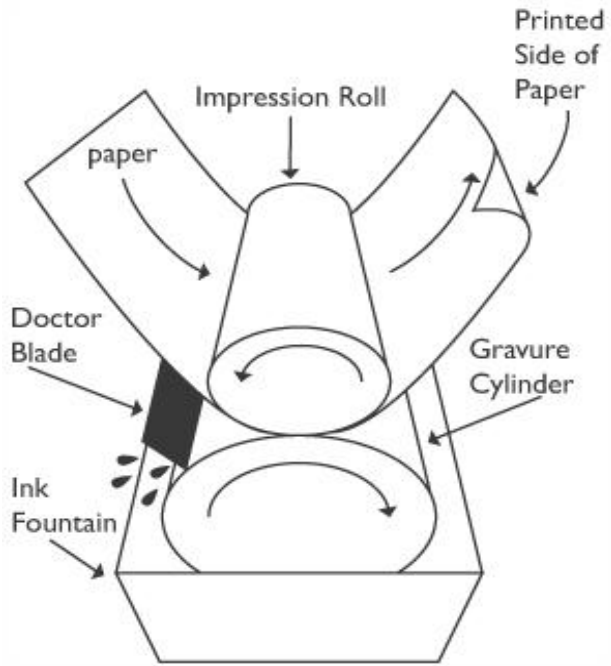
Batch Production

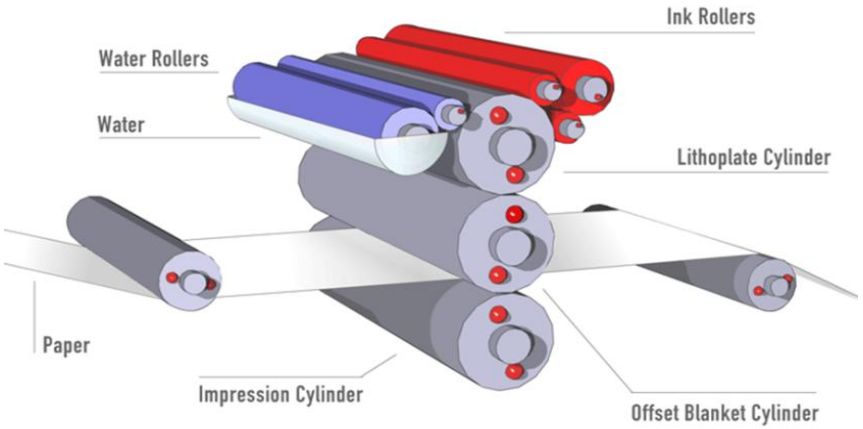
Industrial Manufacture

Rotogravure

A high volume printing method used to produce high quality printed images.







Offset Lithography

A low cost method of printing in very high volume. The most extensively used commercial printing process.

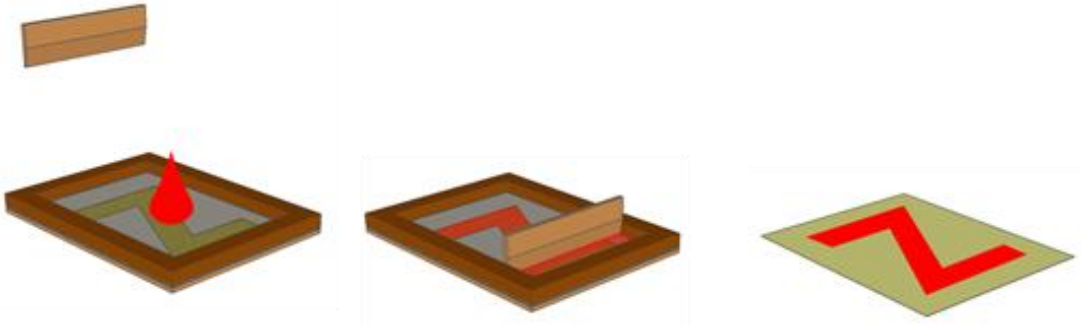
Flexography

Flexible lithography for printing thick materials or flexible materials

Industrial Manufacture

Screen printing

A smaller scale printing process used for shirts and posters. It can use the four process colours or custom colours can be mixed.



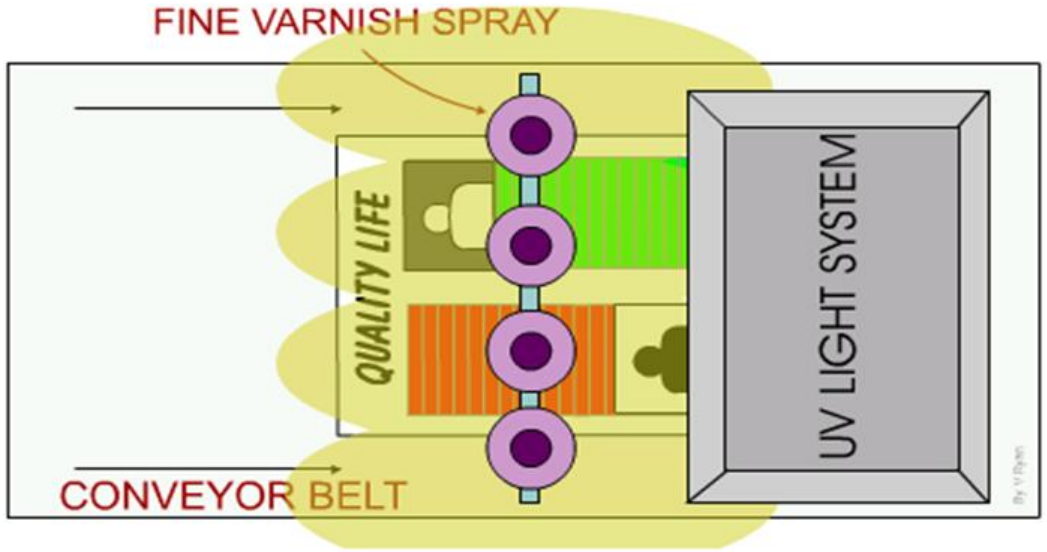
Digital Printing

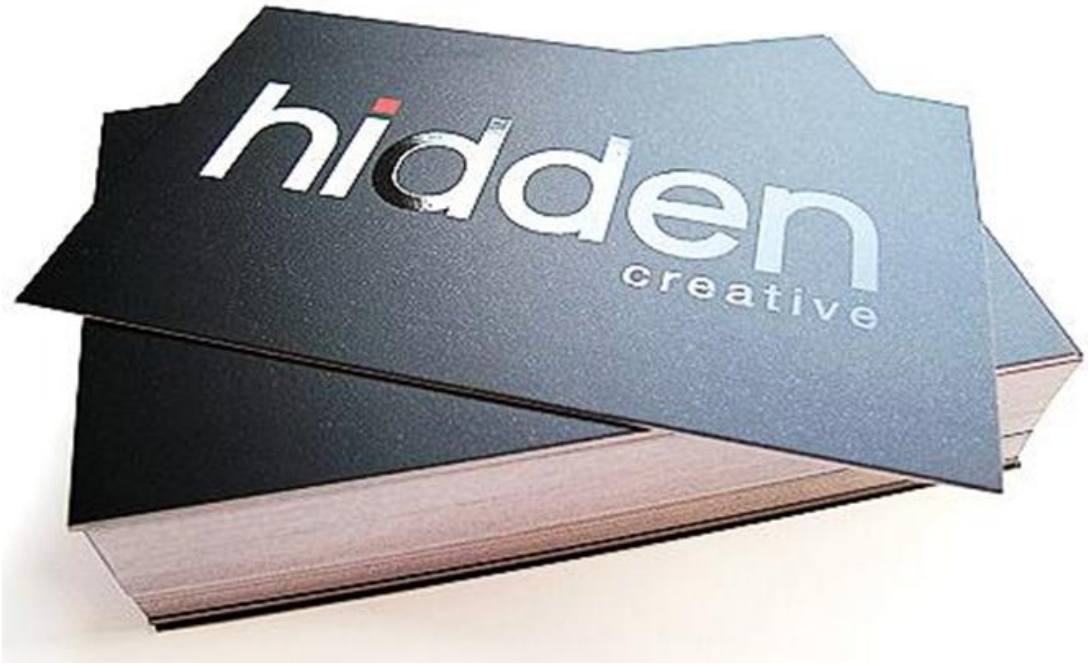
This includes **inkjet** and **laser printing**.
It is used for small print runs and one-offs.
It is too slow and too expensive for large print runs.
Used for photograph printing. One-off art and poster prints, documents and presentation boards.

Industrial Manufacture

UV Varnishing

Used to create a glossy effect on packaging and magazine covers





Spot Varnishing

Where only a patch of a packaging, book or card is varnished to create an unusual visual effect.

Industrial Manufacture

Embossing

Where an area of the paper or card is raised.

Can be used to make a product look authentic.

Used for expensive packaging, greetings cards, tickets and letterhead paper.

Foil Blocking

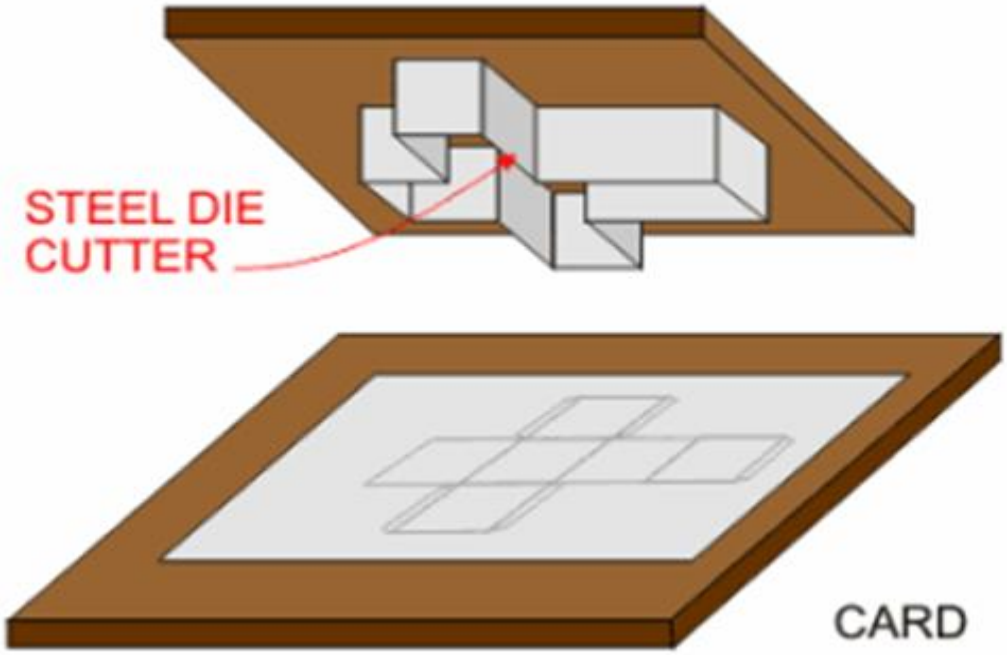
Where foil is heat pressed onto a packaging, greetings card, book or ticket to give an expensive and luxurious effect.

It can also be used to prove the authenticity of certificates and tickets.

Industrial Manufacture

Die Cutting

Used on a large scale for cutting out packaging, pages of books, magazines, pop-ups, all nets etc...

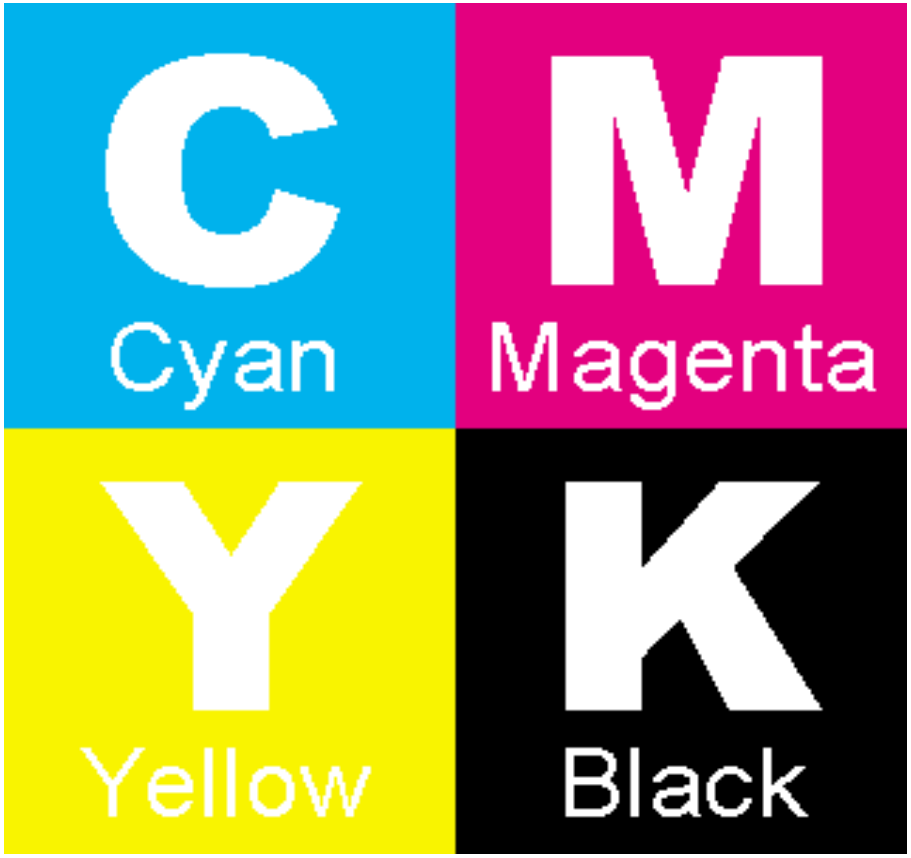


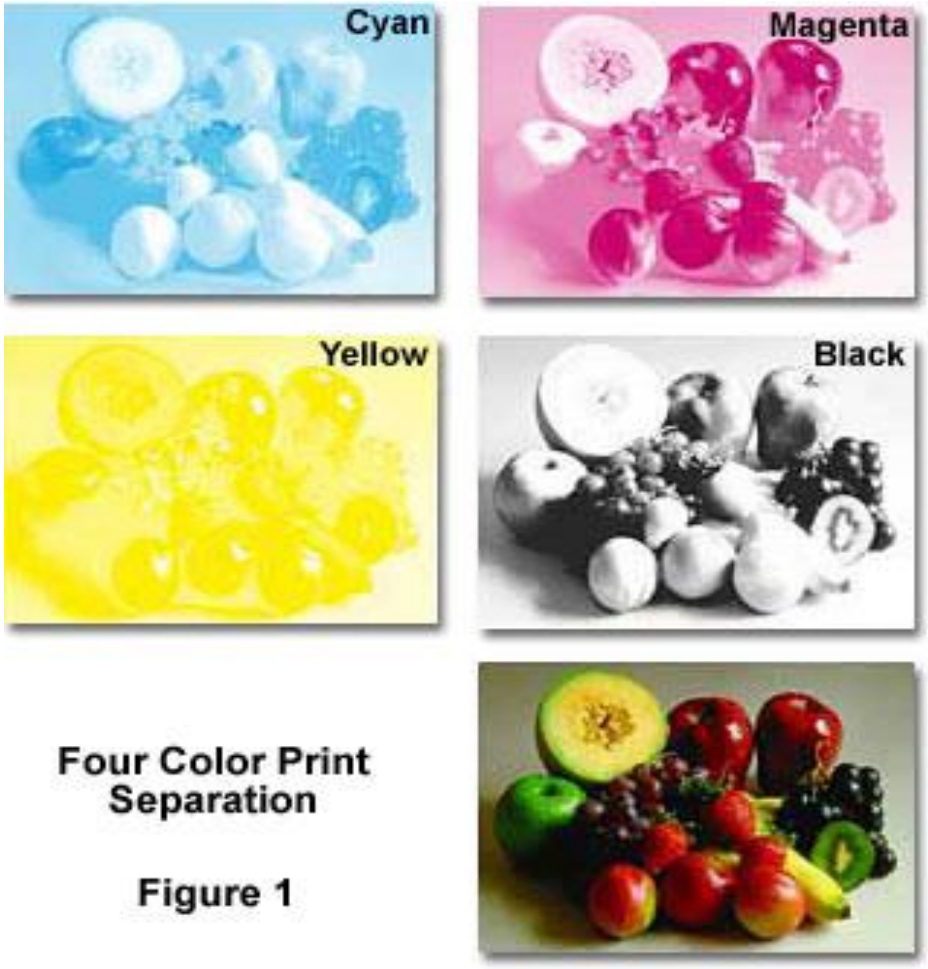
A cutting die can have creasing bars as well as cutting and perforation bars.

Industrial Manufacture

The Four Process Colours

These four colours are used in all standard printing methods. They can be mixed to create any colour.





Four Color Print Separation

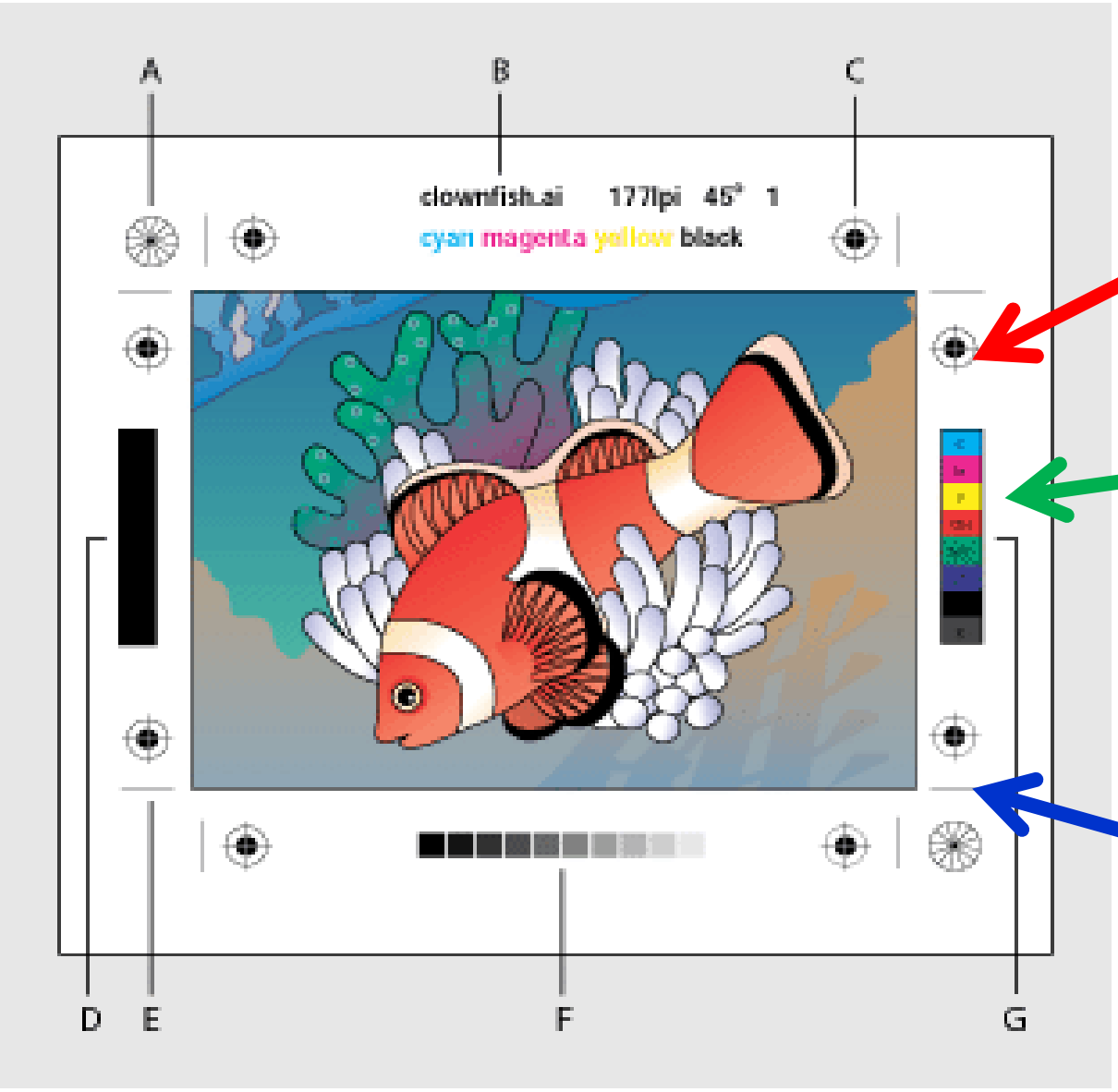
Figure 1

Colour Separation

When an image is printed, it is first separated into the four process colours. This is called colour separation.

Industrial Manufacture

Quality control marks

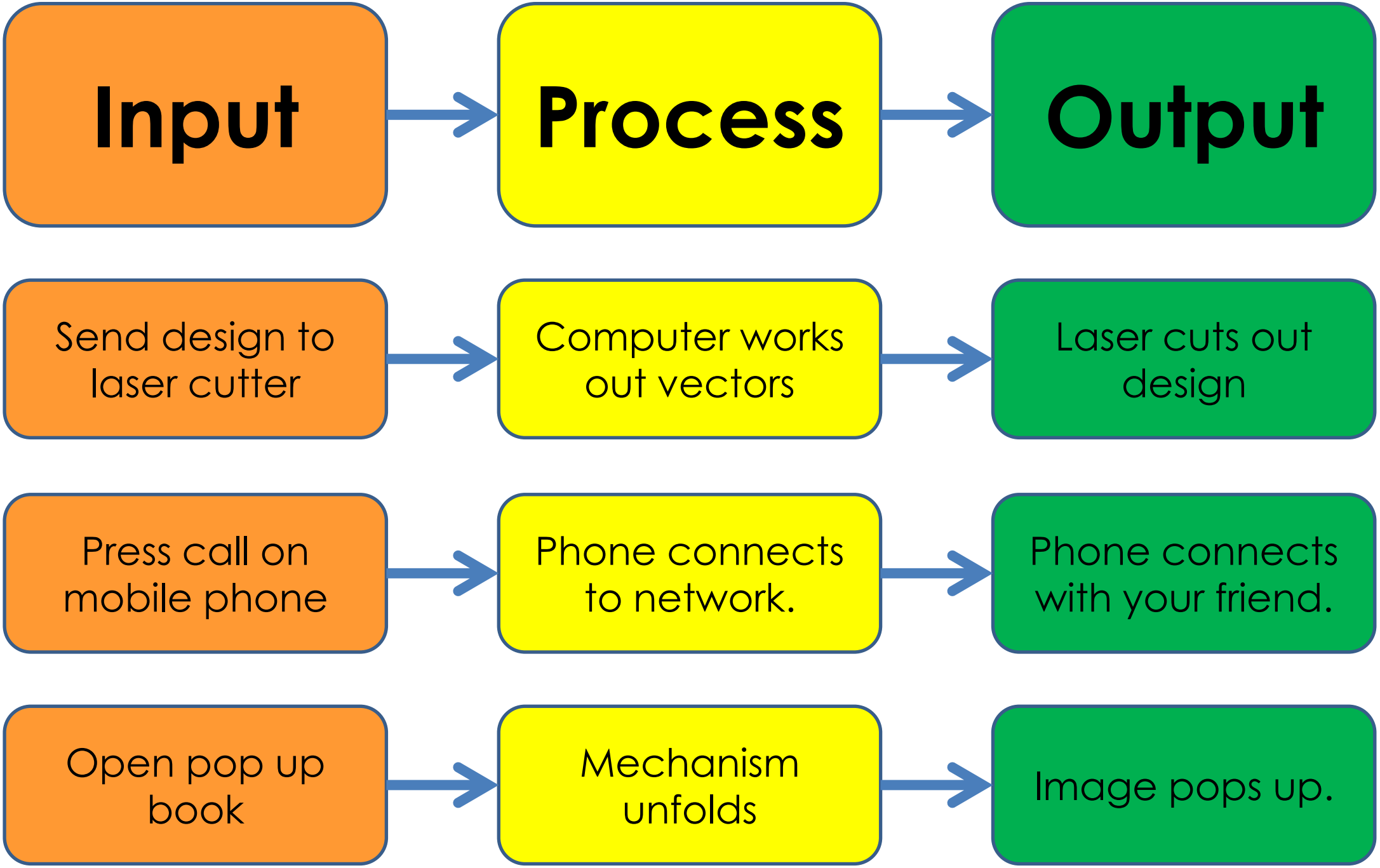


Registration marks

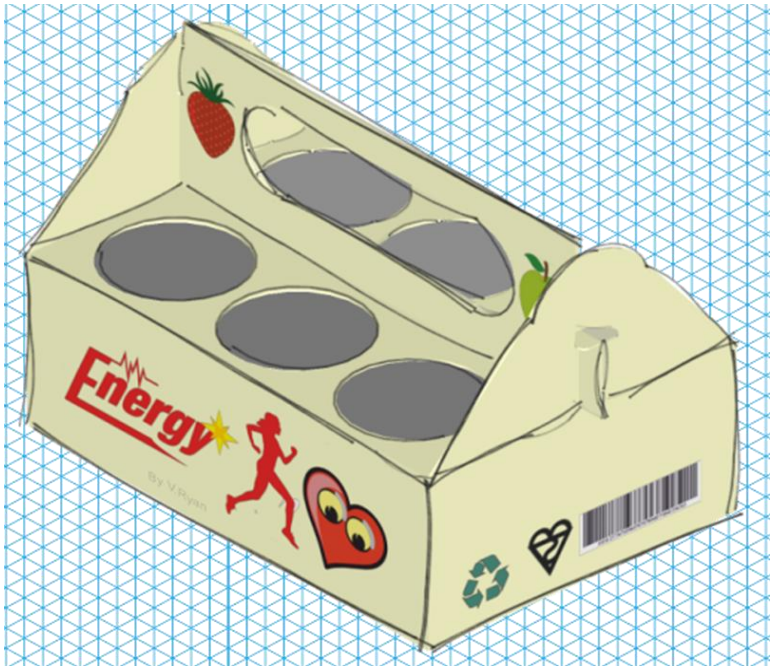
Colour bar

Crop marks

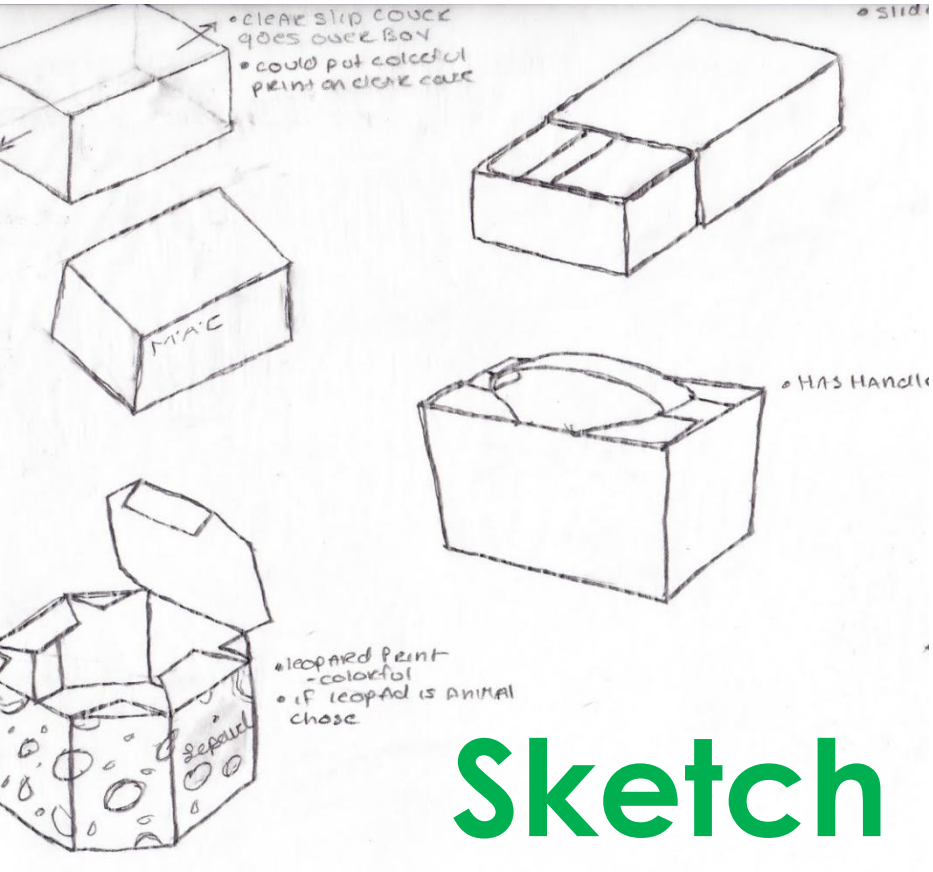
Systems and control:



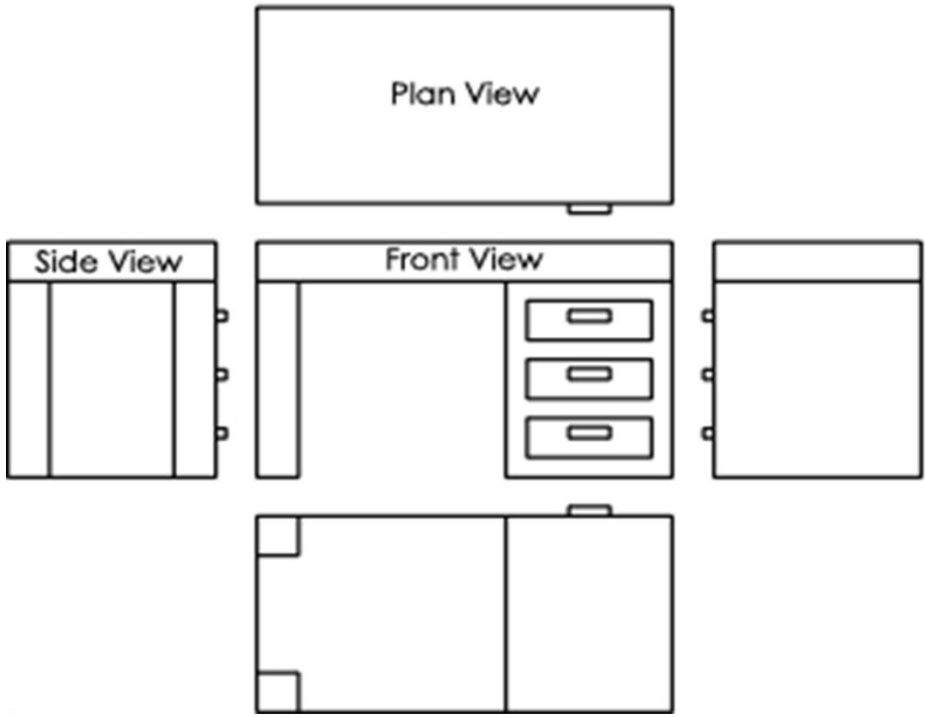
Drawing



Rendered isometric

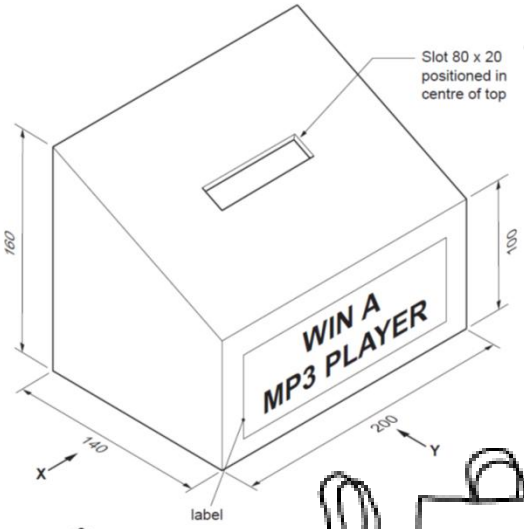


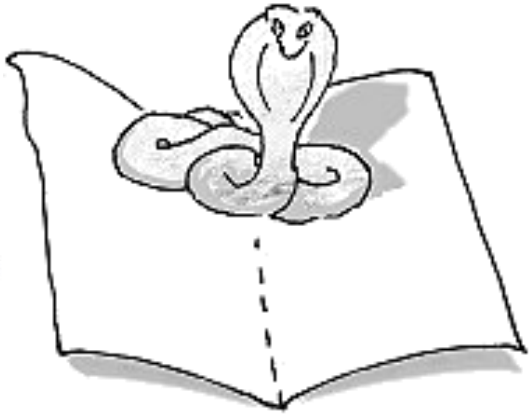
Sketch

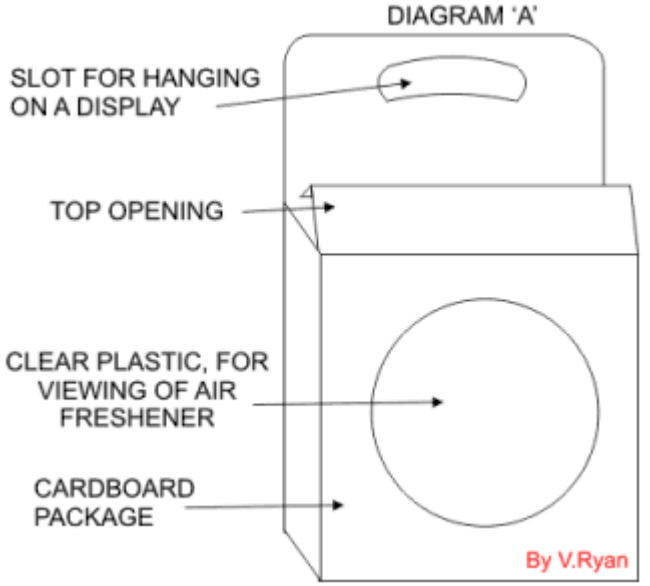


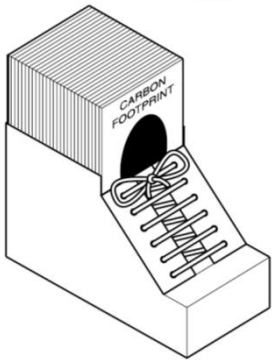
Orthographic

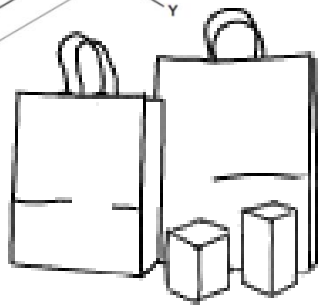
Graphic Products

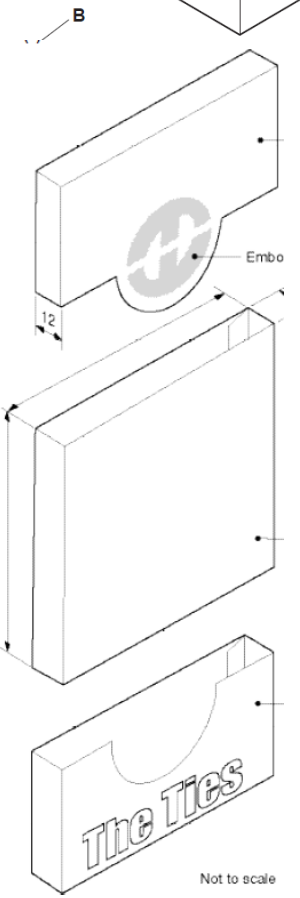


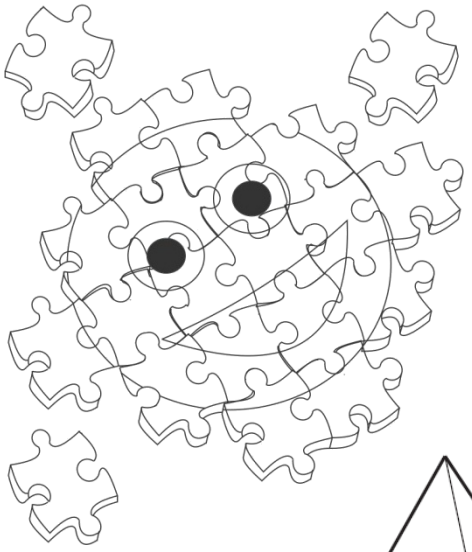


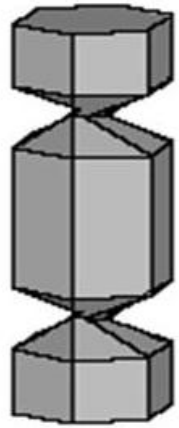


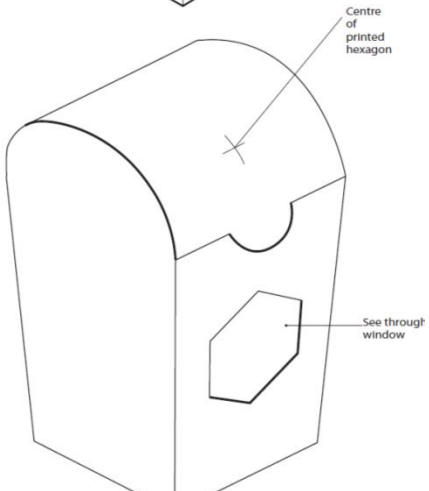


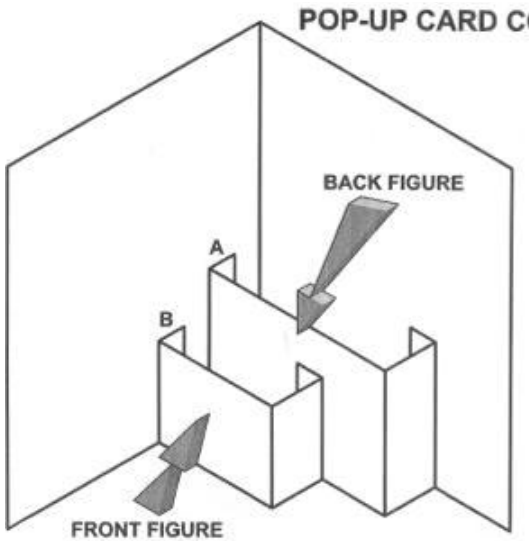


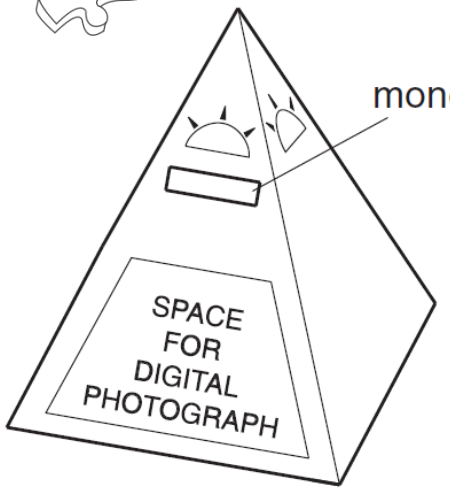






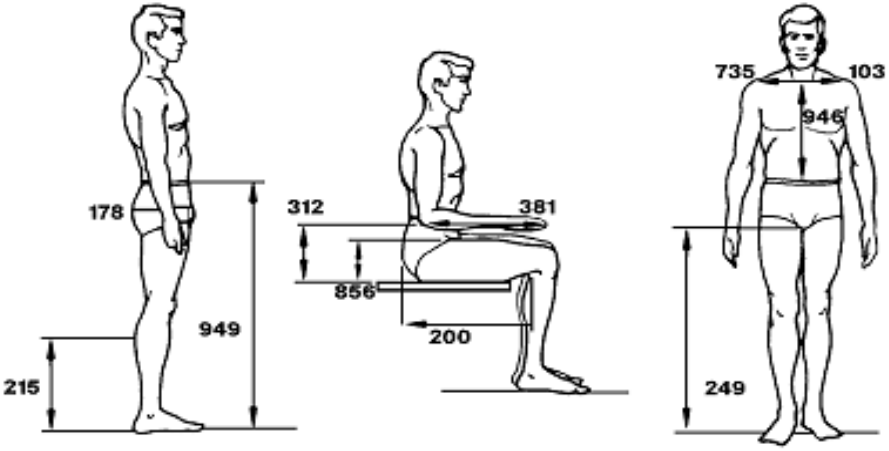






Ergonomics

Designing products to be comfortable and easy to use.



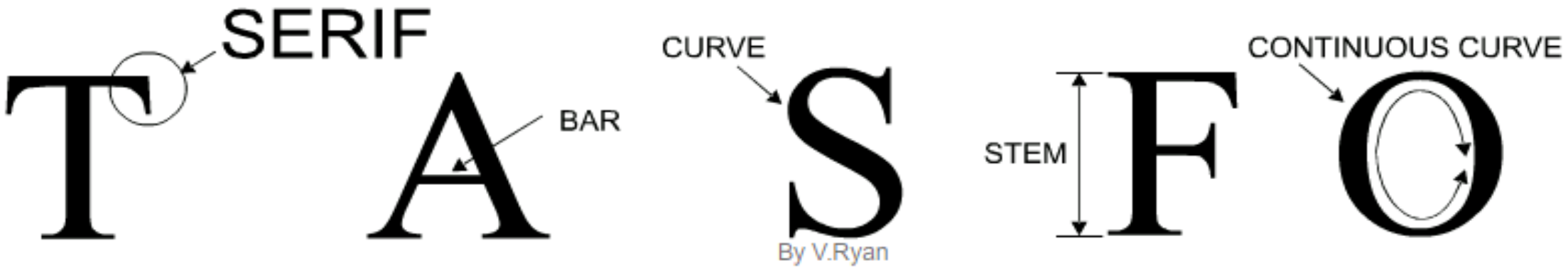
Anthropometrics

Designing products to fit human sizes

Aesthetics

The look or style of a product

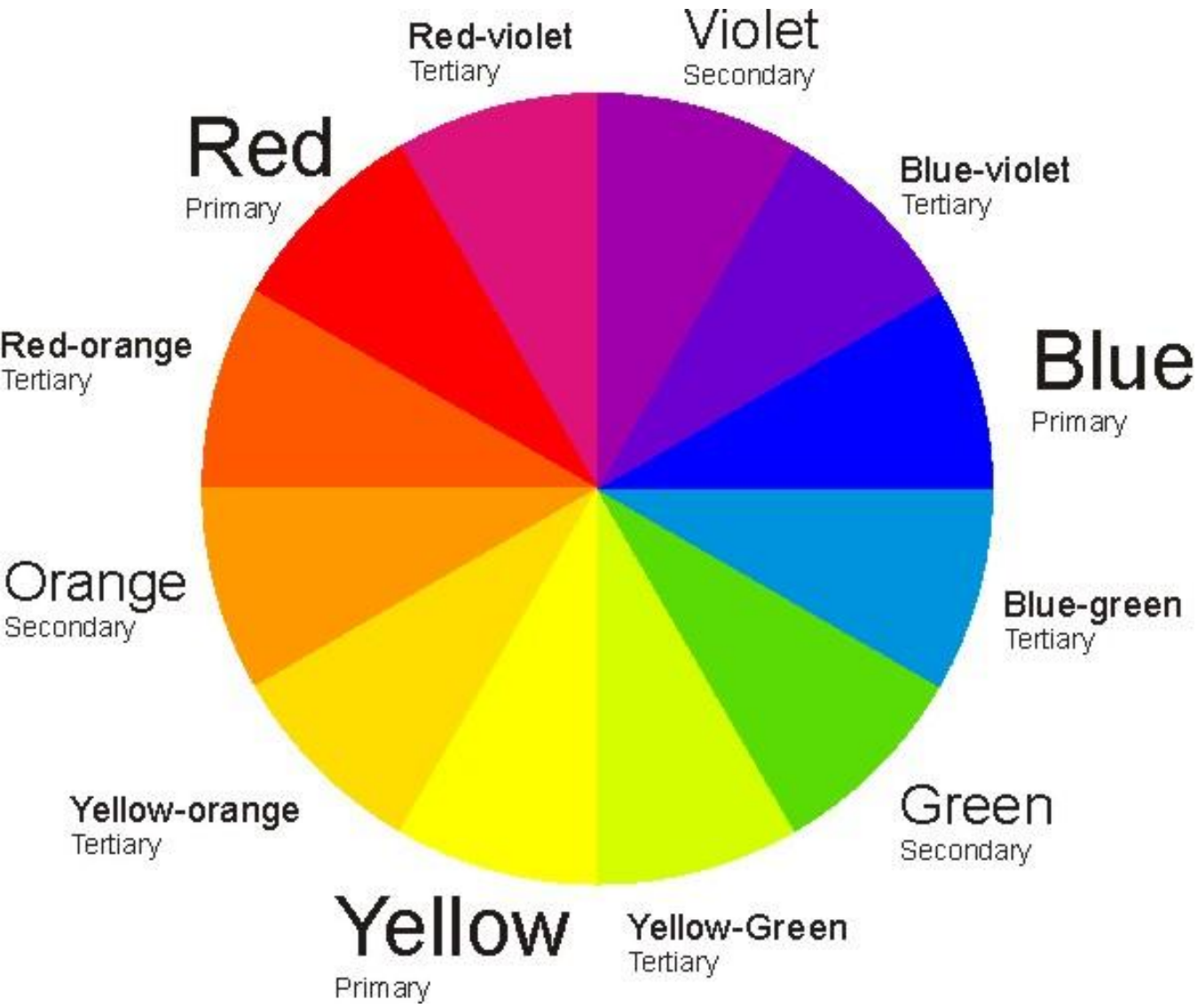
Typography


SERIF
BAR
CURVE
STEM
CONTINUOUS CURVE
By V.Ryan

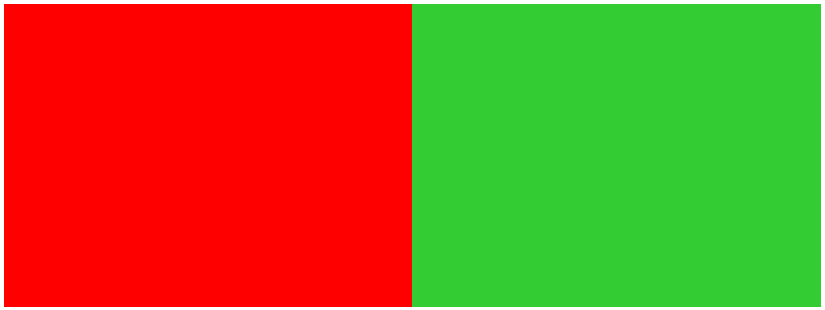

KERNING
APPLIED
Deep Purple


KERNING
NOT APPLIED
Deep Purple

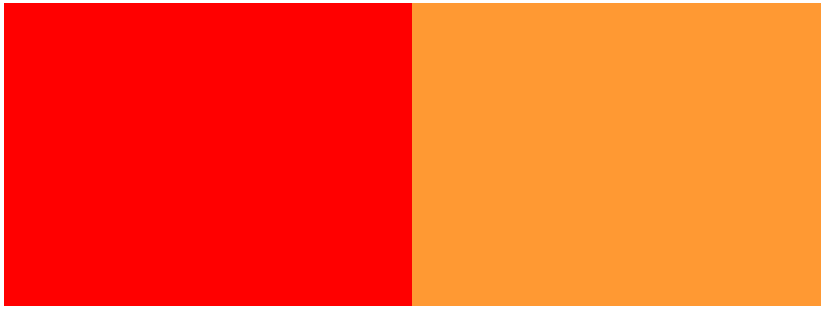
Colour theory



Opposite colours are complimentary



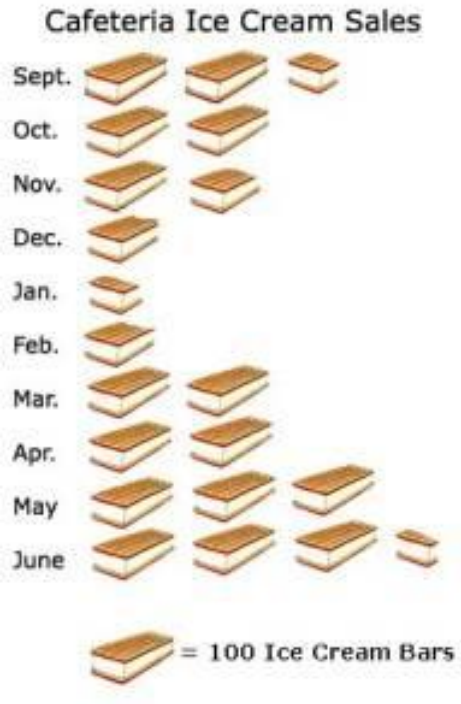
Colours next to one another are harmonising



Pictogram

Pictograph

Monday	3
Tuesday	7
Wednesday	6
Thursday	8
Friday	4
Saturday	2



Exam Tips

Written questions

•Halve the marks to work out how many points to make.
•Make a point, explain it and give an example.

Design questions

•Consider leaving these to last so you can use any remaining time on them.
•Read the question to check exactly what you should design.
•If it asks for constructional details, draw a net.
•Read to check if you need to annotate.
•Check if you should sketch or draw carefully.

Timing

•1 minute per mark.
•Consider answering the short one mark questions first.

Equipment

•You'll get a pack containing set squares, compass, protractor...
•Bring colouring pencils, a pencil, a black pen and any favourite rulers or compasses.

Key words

•Use your key words list / glossary for last minute revision.