Graphic Communication

National 4&5 - How To Pass Evening

National 4 & 5 - Coursework

National 4	National 5	Time Allocation*
2D Graphic Communication	2D Graphic Communication	60hours
3D and Pictorial Graphic Communication	3D and Pictorial Graphic Communication	60hours
Added Value Unit	Assignment (closed book, under exam conditions)	Nat 4 – 20hours * Nat 5 – 8hours *
	Final Exam	2hours

* All work must be completed within this allocated time.

National 4 - Units and Outcomes

2D Graphic Communication

Outcome 1

- Candidates will:
  - Produce and interpret 2D sketches and drawings

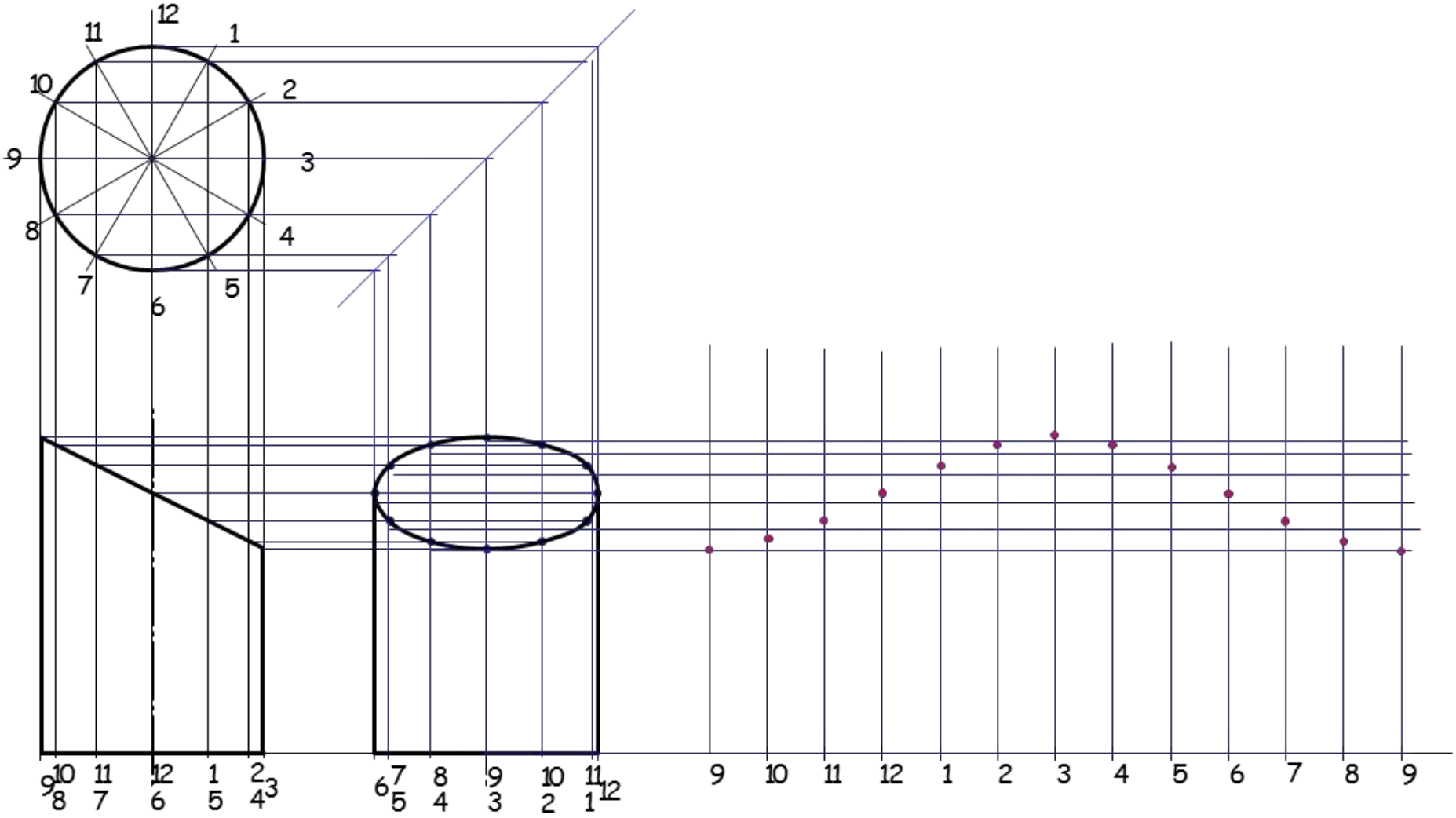
Outcome 2

- Candidates will:
  - Produce preliminary 2D colour designs and illustrations for single page promotional displays

Outcome 3

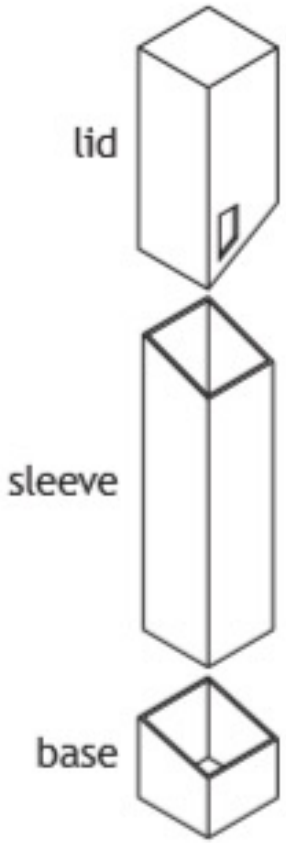
- Candidates will:
  - Create 2D promotional graphic layouts

Examples of work covered so far.



1. A range of marker pen packaging is shown below.

Rendered 3D CAD Illustration



Exploded Pictorial View

(a) Identify the correct group of 3rd angle orthographic views for **the lid** by ticking (✓) a box below. Ignore wall thickness. **1**

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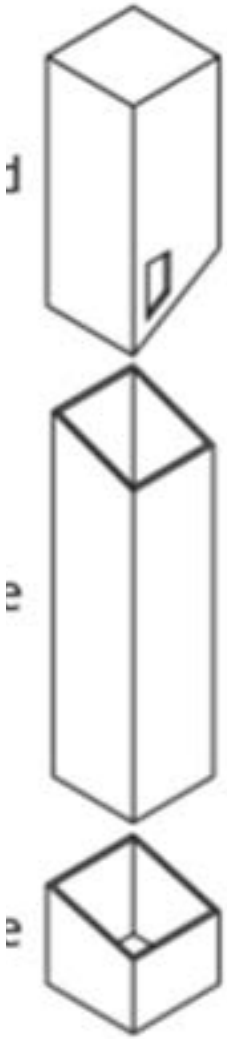
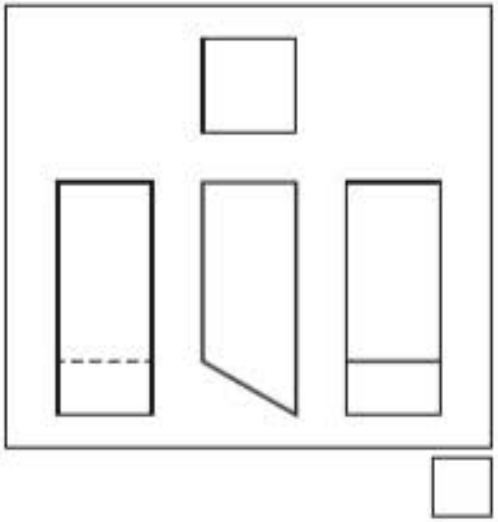
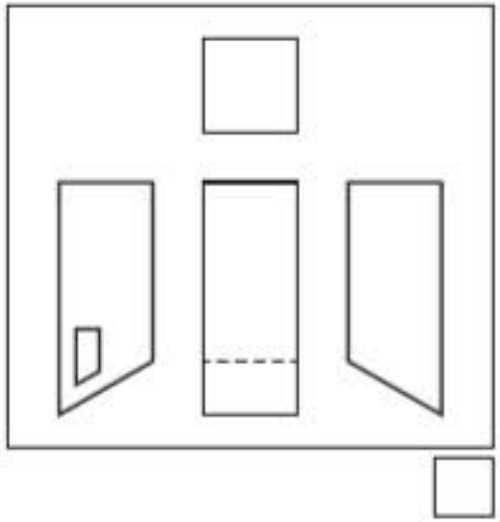
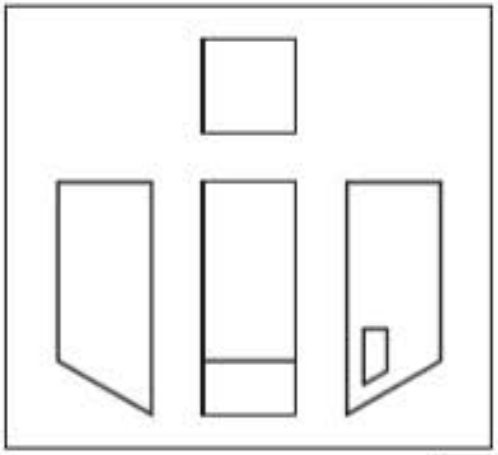
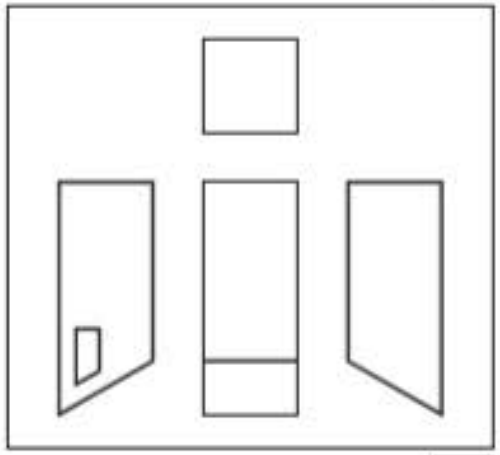


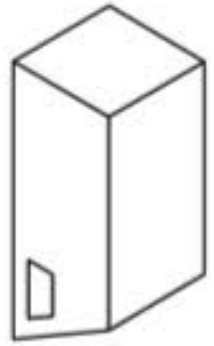
Pictorial View



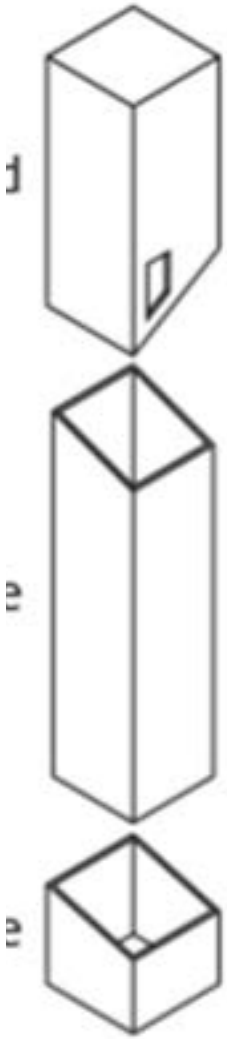








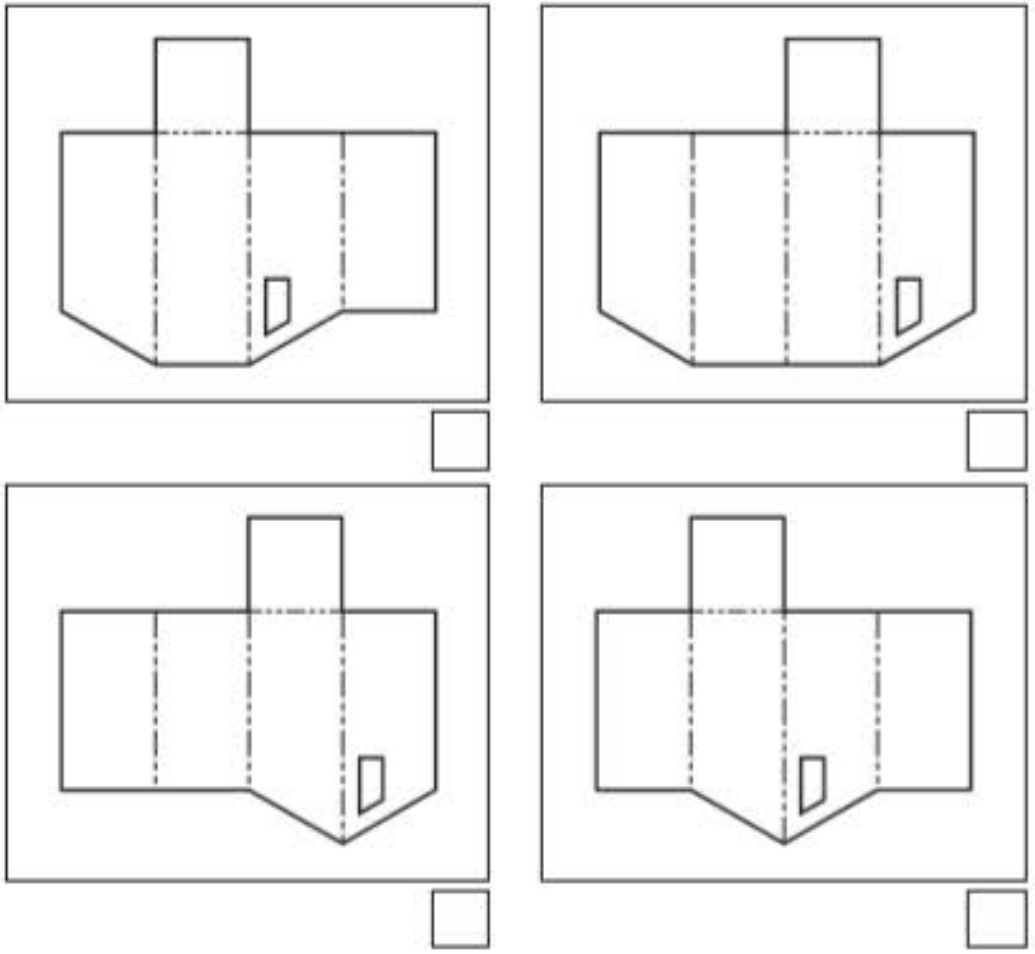
Pictorial View

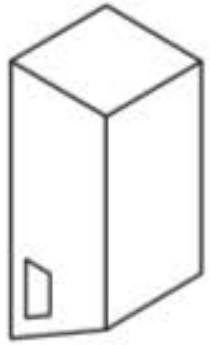


Pictorial View

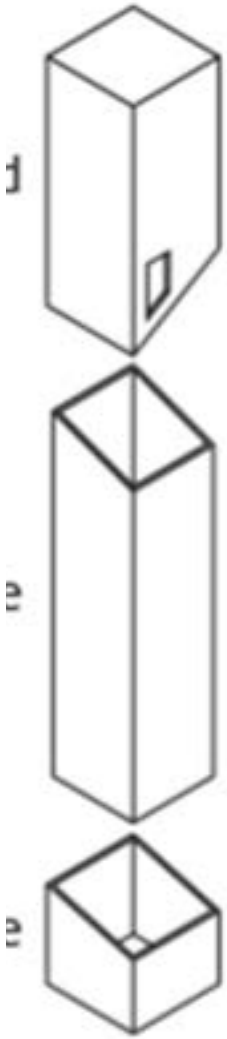
To complete the 2D CAD drawings required for manufacture, the CAD technician has been asked to produce the surface developments for the lid and base.

(c) Identify the correct surface development of **the lid** by ticking (✓) a box below.

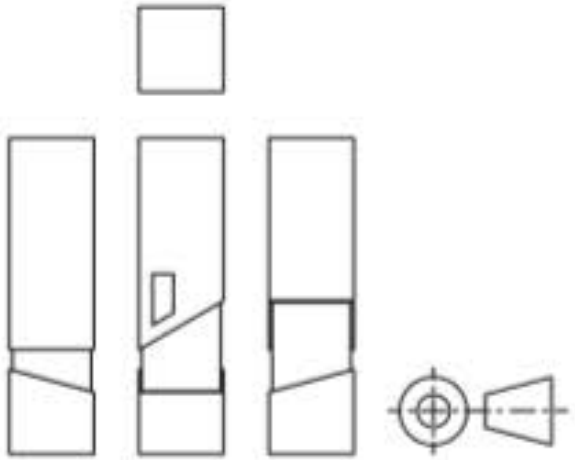




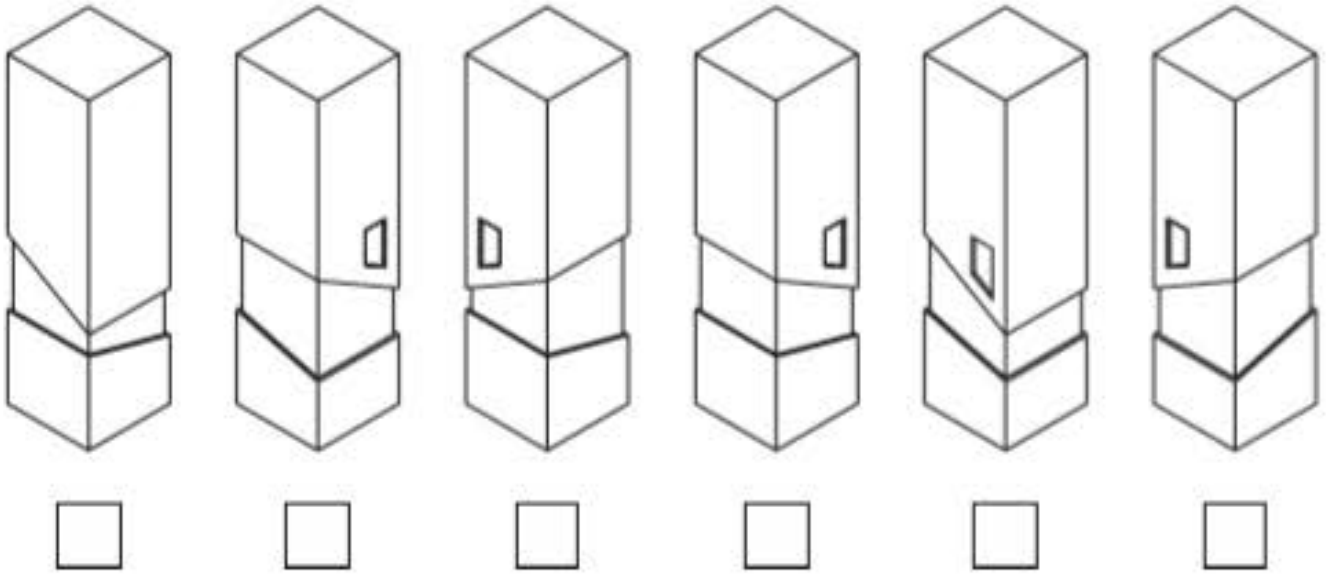
Pictorial View

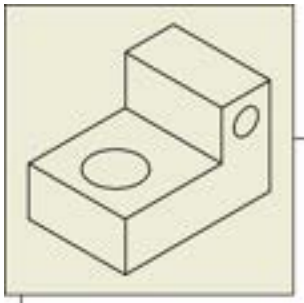


Pictorial View

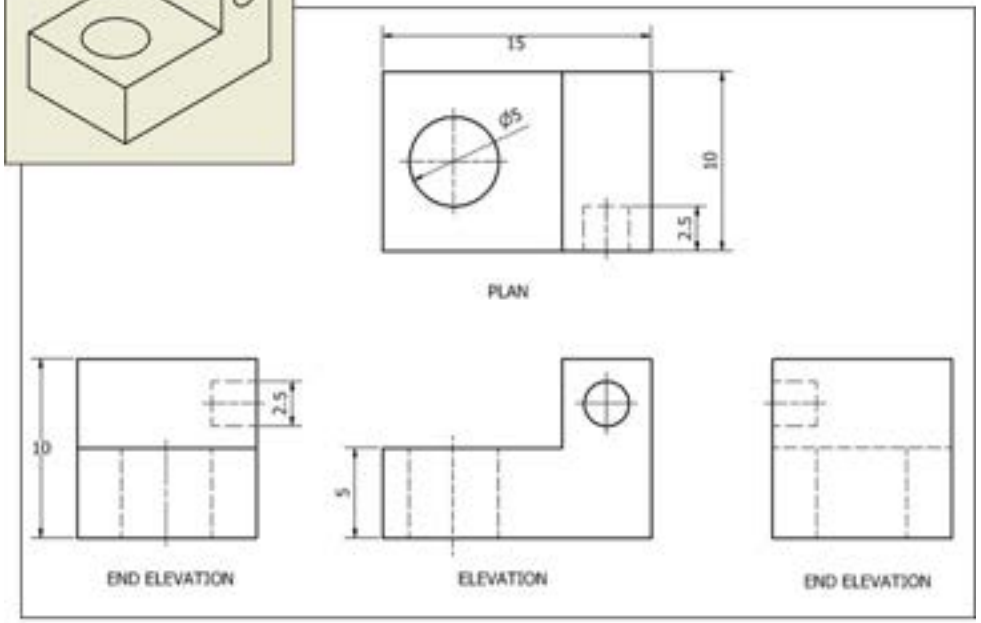


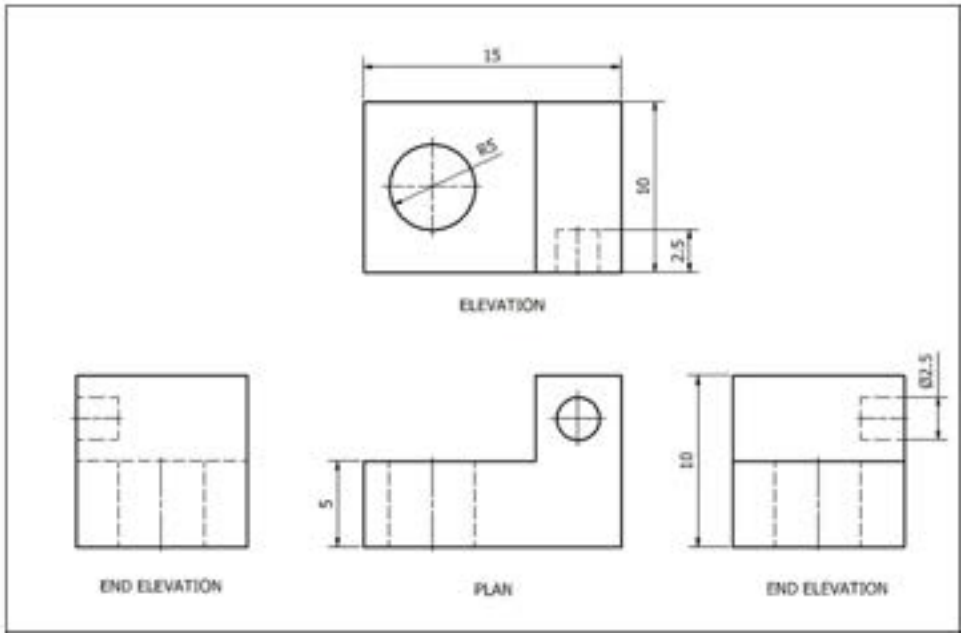
Orthographic Assembly Drawings





Below are two orthographic drawings of the same block. There are errors on both drawings. Spot the differences by circling them and then place a tick beside which is the correct method that conforms to BSi.





Page Layouts and Features

Header; this will appears on every page in this section of the publication

Heading; this is the main title on the page. Its usually short but eye catching.

Sub Heading; this can be used to give more info on the article or can be used to divide the article up into different sections.

Columns; this is the name given to the area of body text. These vertical columns are restricted in width to make the text easier to read.

Gutter; this is the narrow space that separates the columns.

Footer/Folio; these are placed on the bottom of each page in the publication. The folio is the page number, while the footer can contain information like a web address, issue number etc.

Rule; this is a straight line which has been included to neaten up the structure of the page or separate different areas in an article.

Image; a picture which has been included in the publication

Caption; this gives additional information about the image or photograph.

Cropped Image; this is where a background or part of an image has been removed to create a more interesting shape.

National 4 - Units and Outcomes

3D and Pictorial Graphic Communication

Outcome 1

- Candidates will:
  - Produce and interpret pictorial sketches, pictorial drawings and 3D models

Outcome 2

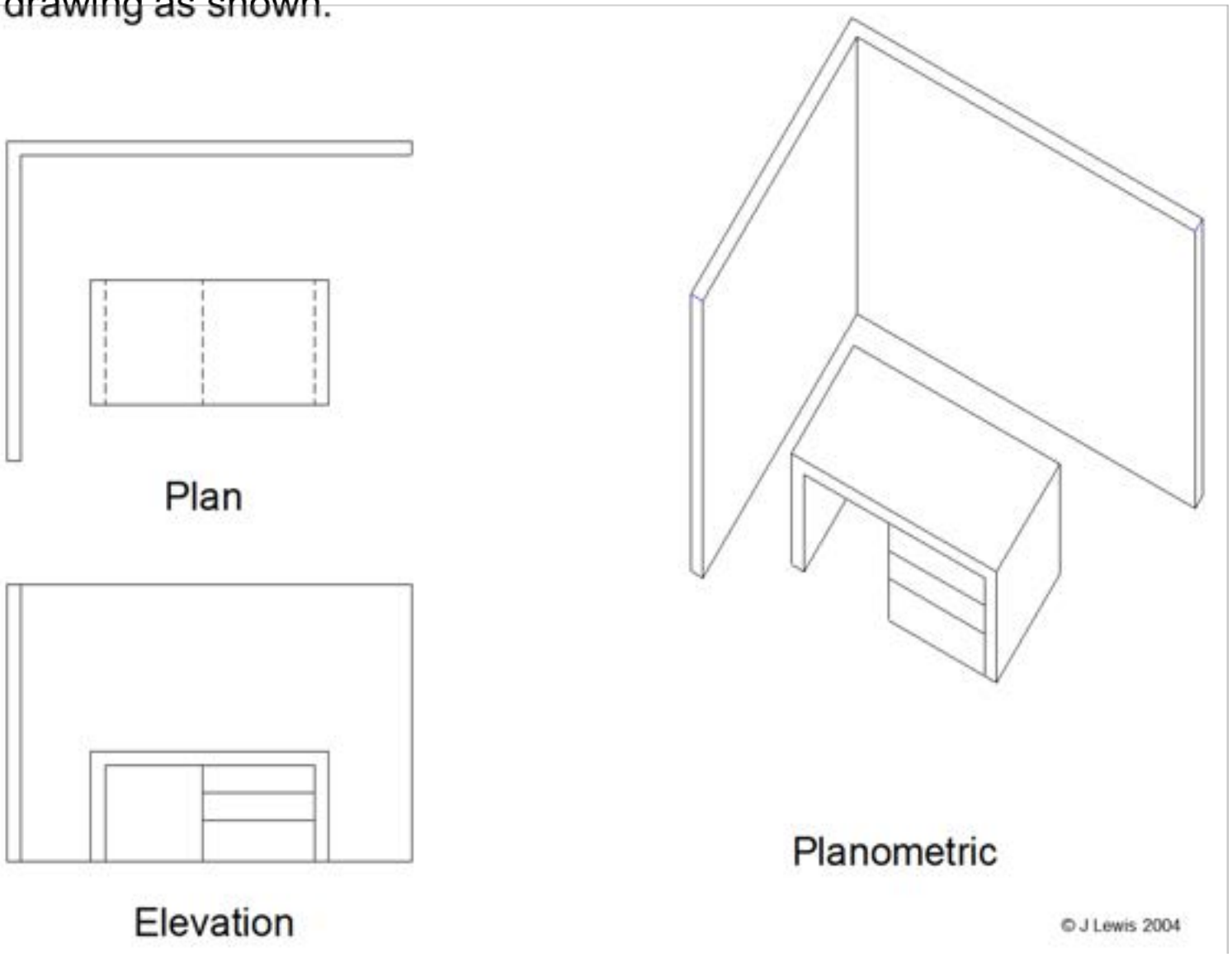
- Candidates will:
  - Produce pictorial and 3D colour illustrations

Outcome 3

- Candidates will:
  - Create pictorial or 3D promotional displays

Planometric Example

Finish the drawing as shown.



REVOLVE

WHAT IS IT?

Revolve is another modelling technique that you should be familiar with from National 5 Graphic Communication.

It is a fantastic tool for creating rounded features and one of the most commonly used commands in industry.

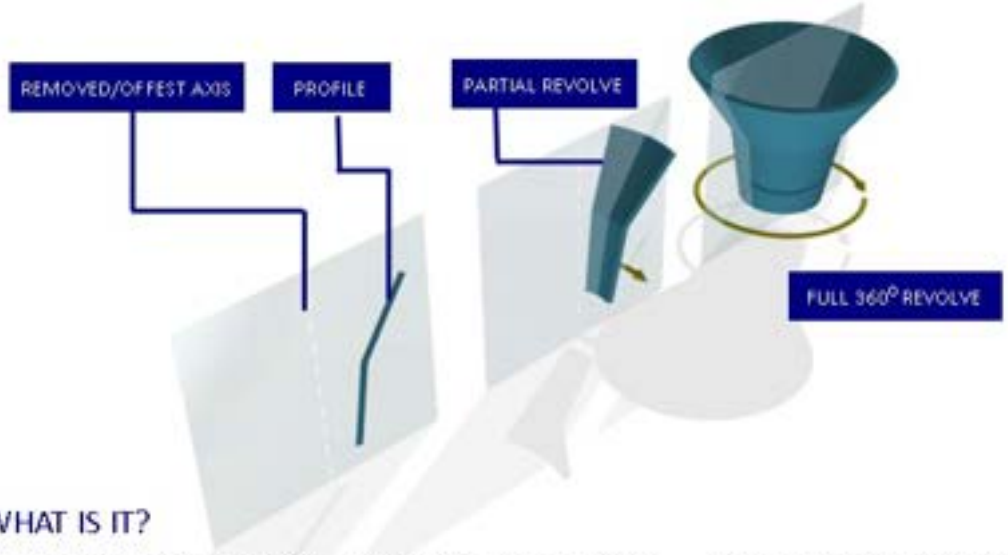
You can create components in one command that would take several extrude features to model. This tool can take some practice, but stock with it.

EXAM PREP

Revolving profiles are also part of the National 5 Graphic Communication course but questions will be much tougher at Higher.

Questions are most likely to include subtraction of solids or use of offset axis.

Look out for sizes of profiles and lines that may be part of an axis. Also look for any component that is revolved less than 360°

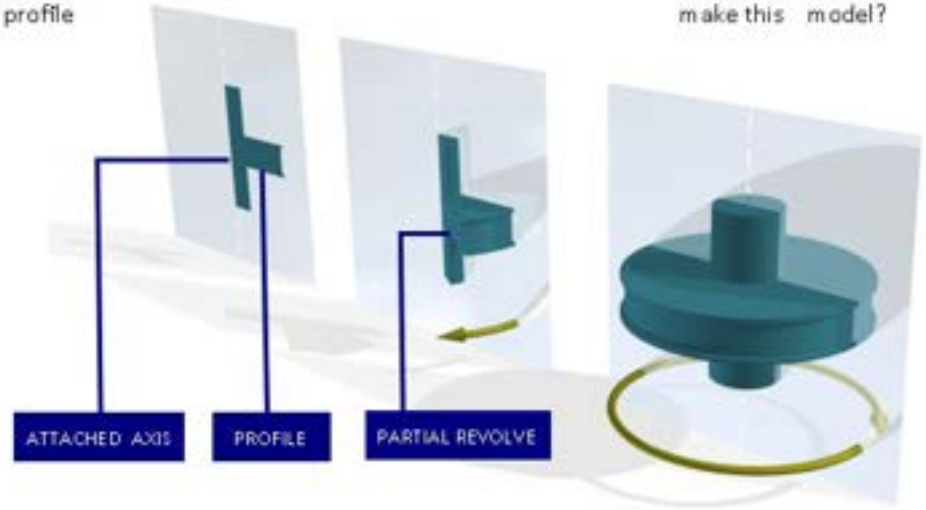


WHAT IS IT?

The profile is drawn accurately and the axis created. Accuracy is so important in 3D Modelling. Use dimensions to ensure accuracy and constrain your profile

The profile can be revolved partially by specifying the angle of revolution. Choosing the most efficient modelling techniques is important.

This part was revolved using a **single sketch** and a **single revolve** command. How many sketch and extrude commands would it take to make this model?



As well as learning various 3D modelling software techniques, processes and edits, pupils learn how to turn their models into realistic images, adding lighting, shadows, colours, materials, textures etc.

Unit Assessment

3 ways to approach assessment:

- Unit-by-Unit Approach – Standard
- Combined Approach – 5 Assessment tasks
- Portfolio Approach – Open, less directed approach
  - Projects may have to first be verified by SQA

Assessment of Units – Combined Approach

Assessment evidence can be gathered from the following 5 tasks. These tasks cover all outcomes required:

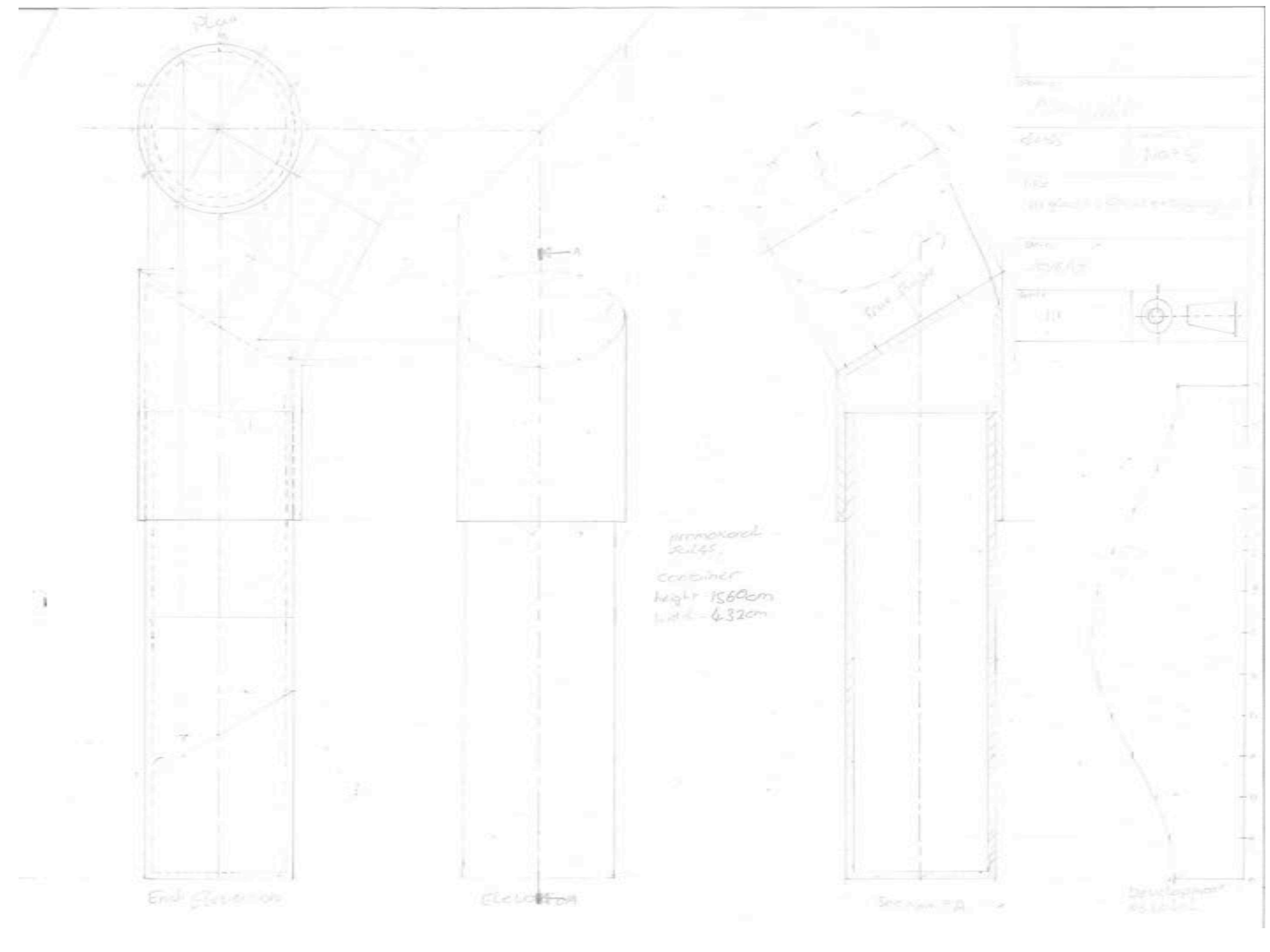
- 3D cinema glasses case
- Mobile phone wall charging device
- Child's toy
- Wall display
- Healthy living statistical graph

These tasks can be completed in any order and usually finished by

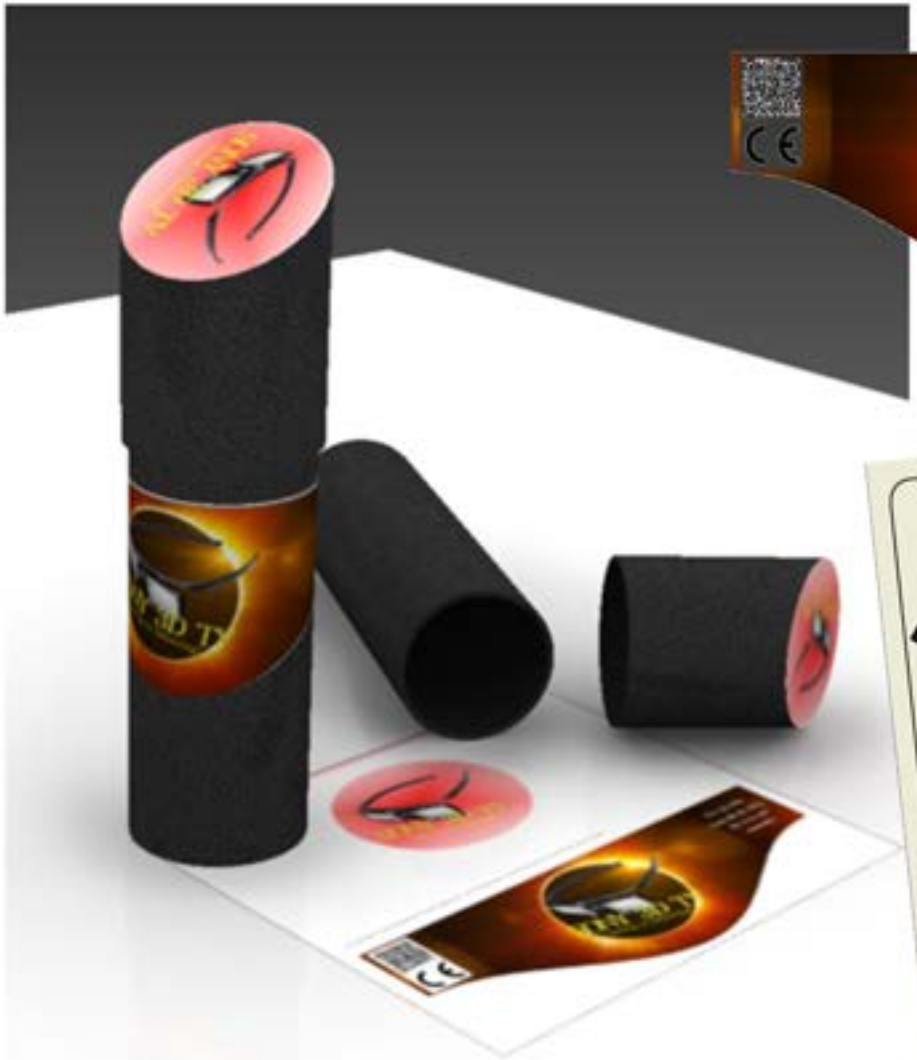
End of November.

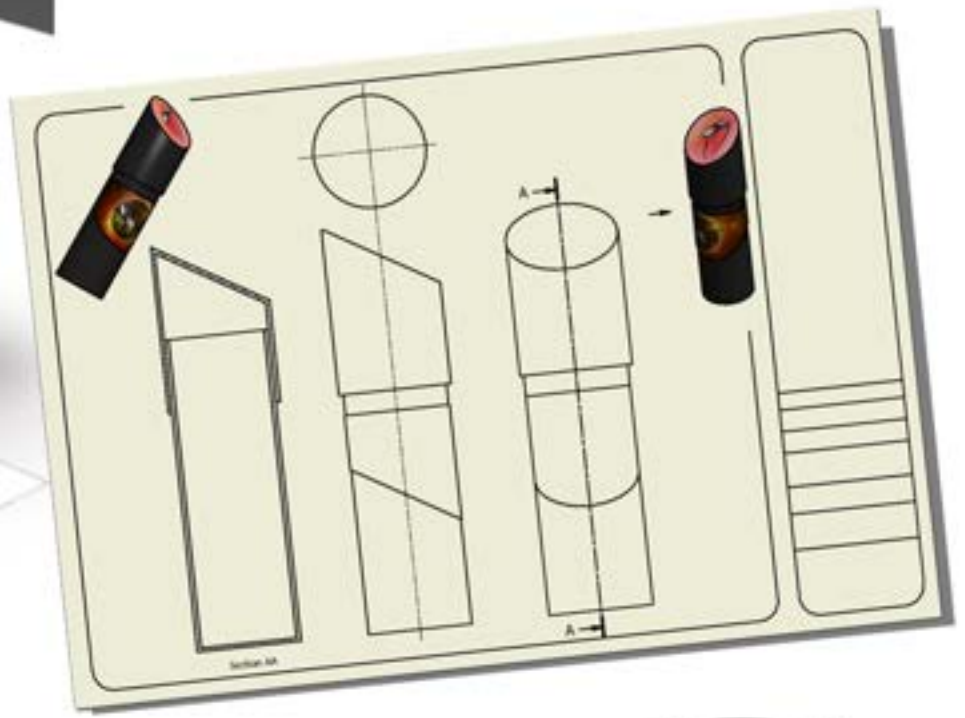
There are five structured tasks.

Task	Activities
3D cinema glasses case	◆ Orthographic drawing ◆ Sectional work ◆ True shape and surface development ◆ Promotional DTP ◆ Scale
Mobile phone wall charging device	◆ Orthographic sketching ◆ Dimensioning ◆ Exploded pictorial sketching ◆ Illustration and rendering
Child's toy	◆ Pictorial assembly ◆ Orthographic assembly ◆ Materials rendering
Wall display	◆ 3D CAD modelling ◆ CAD pictorials ◆ Describing and explaining CAD terms and commands ◆ Planning and producing an instructional leaflet
Healthy living statistical graphic	◆ Plan and produce a statistical graphic using DTP


Plan
A
End Elevation
Elevation
Section
container
height 1569cm
Lid - 432cm

Design Proposal: Sony 3D Glasses
AJAR Graphics





SONY 3D TV Seeing is believing!

There are five structured tasks.

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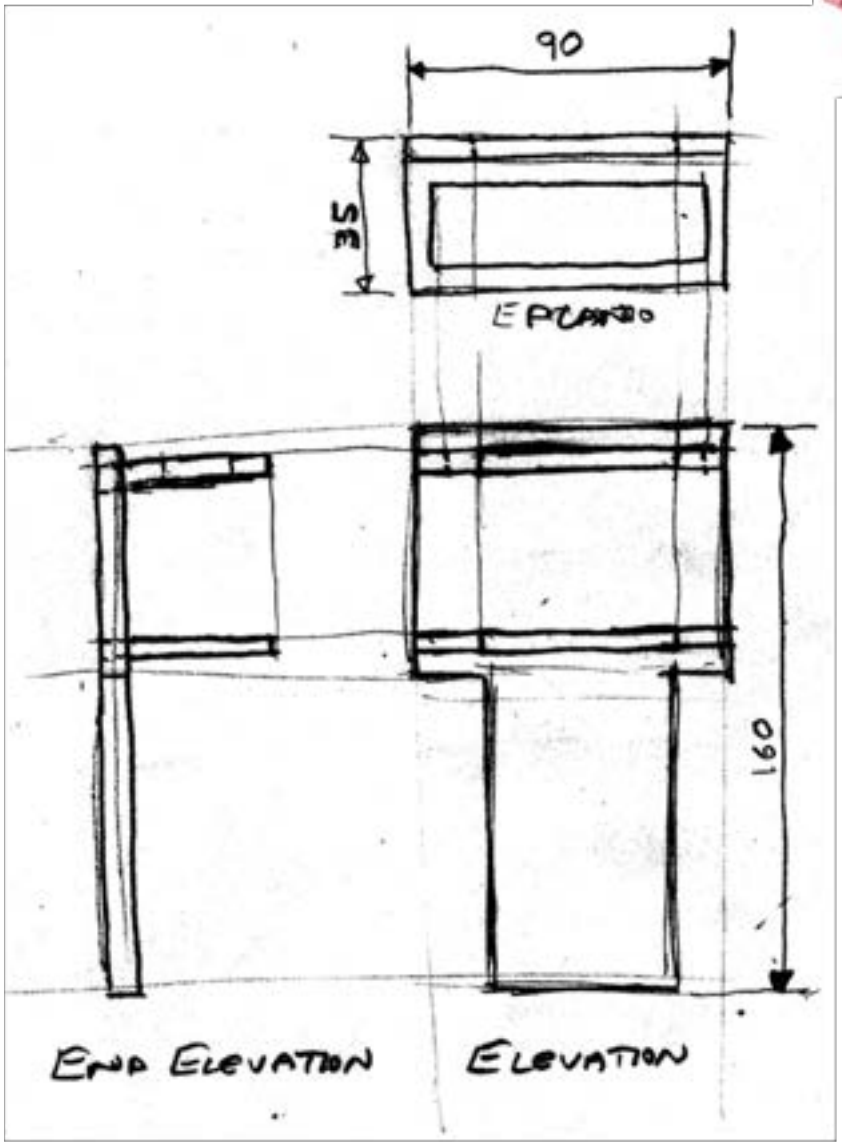
Healthy living statistical graphic	◆ Plan and produce a statistical graphic using DTP

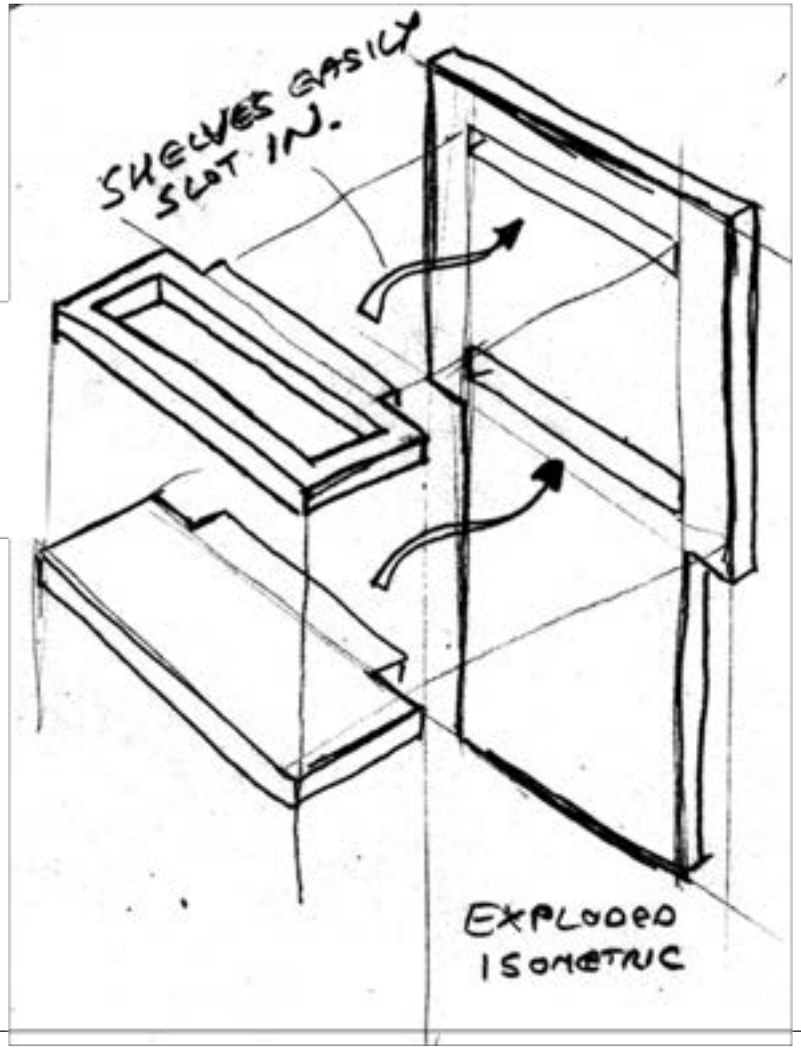
National 4 UASP2 Wall Charger Device

Assessment of 2D 1.1 & 3D 1.1 (Sketching)

In the space below sketch 3 orthographic views:

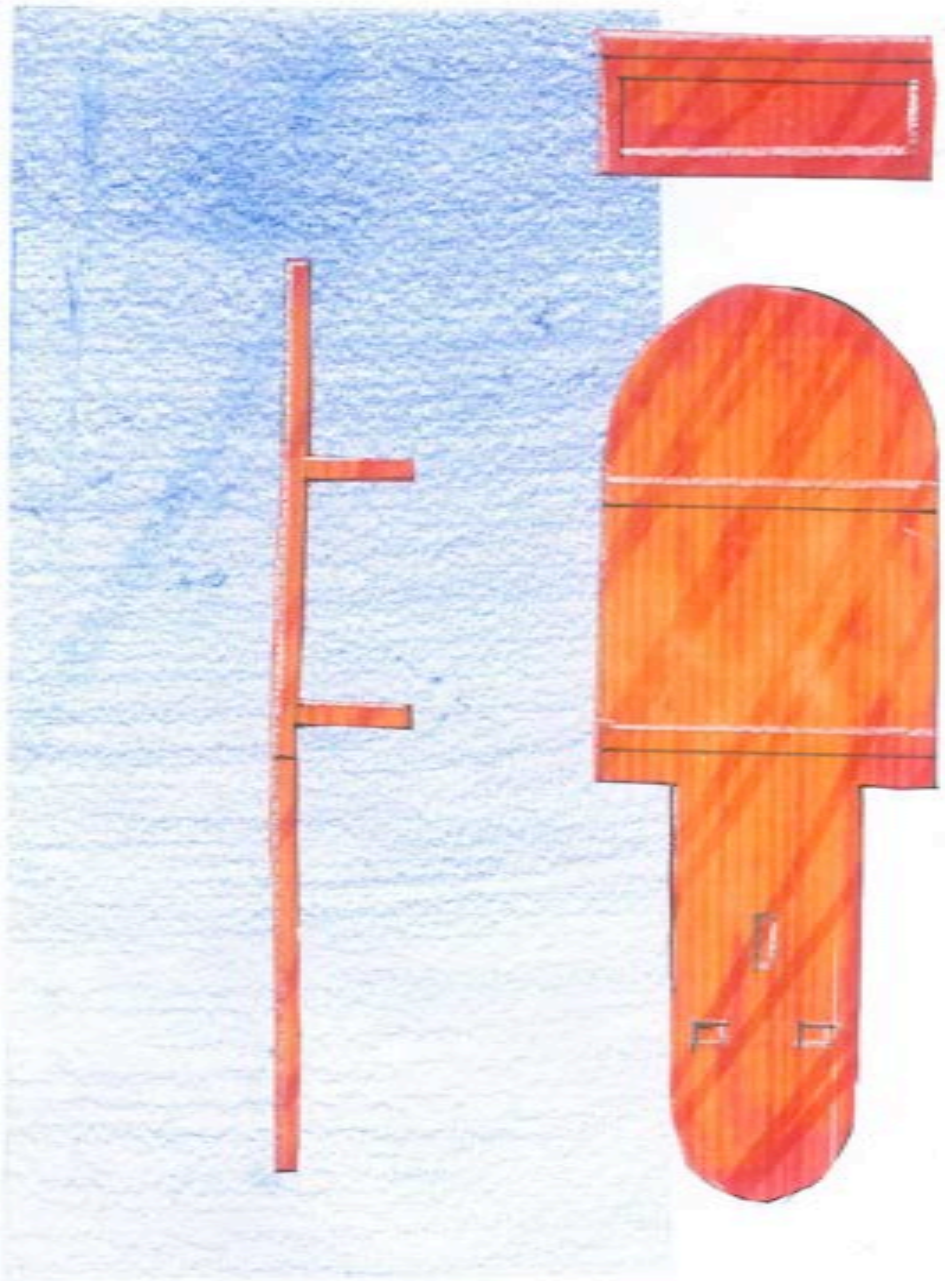


In the space below sketch an exploded pictorial view:



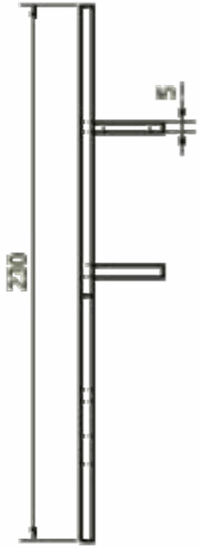
Pupils Name:.....

Date Completed:.....

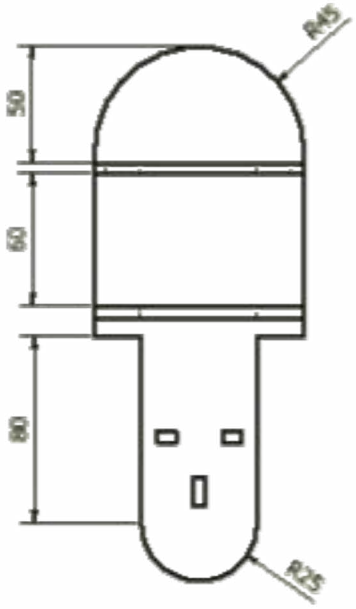


Orthographic of Wall Charger

Plan

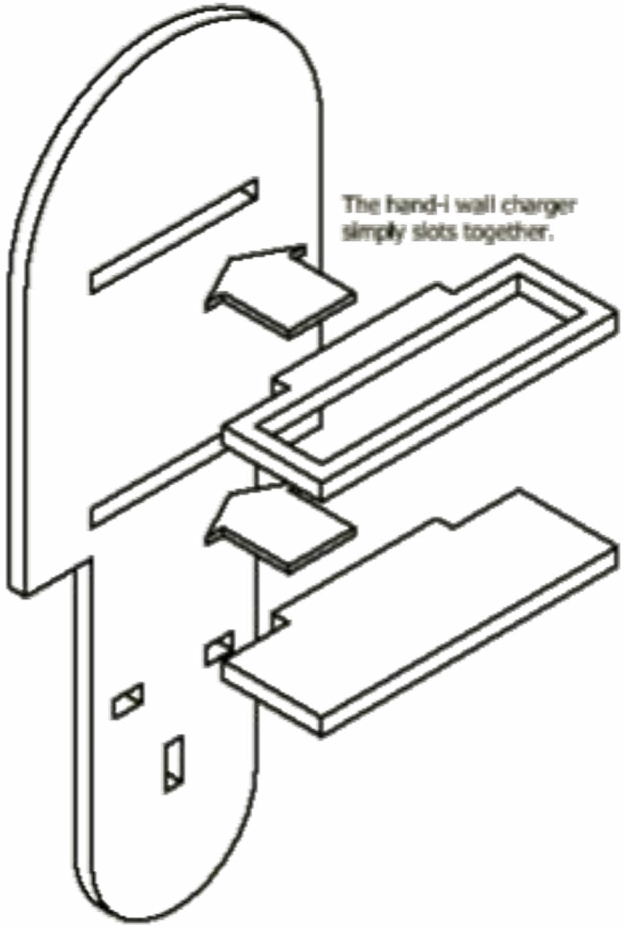


End Elevation



Elevation

Exploded Isometric of Wall Charger



Hand-i
gadgets

Project Title:

Drawing Title:

Drawn By:

Sheet No:

Scale:

Date Drawn:

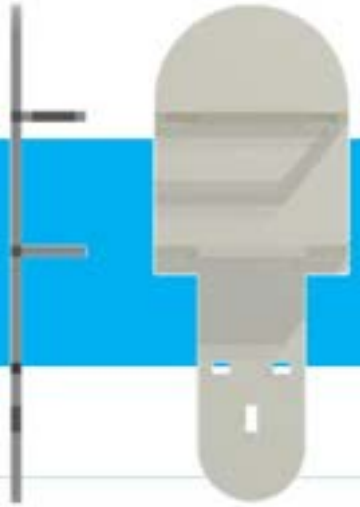
Hand-i gadgets

Another fantastic product from the manufacturer who produces the answers to all your gadget dilemmas.

The wall charger comes flat packed & simply clicks together with ease. This means you can take it with you where ever you go.

Simply plug your charger into the socket as normal.

....easy to assemble, easy to use, makes charging your phone easy too!



There are five structured tasks.

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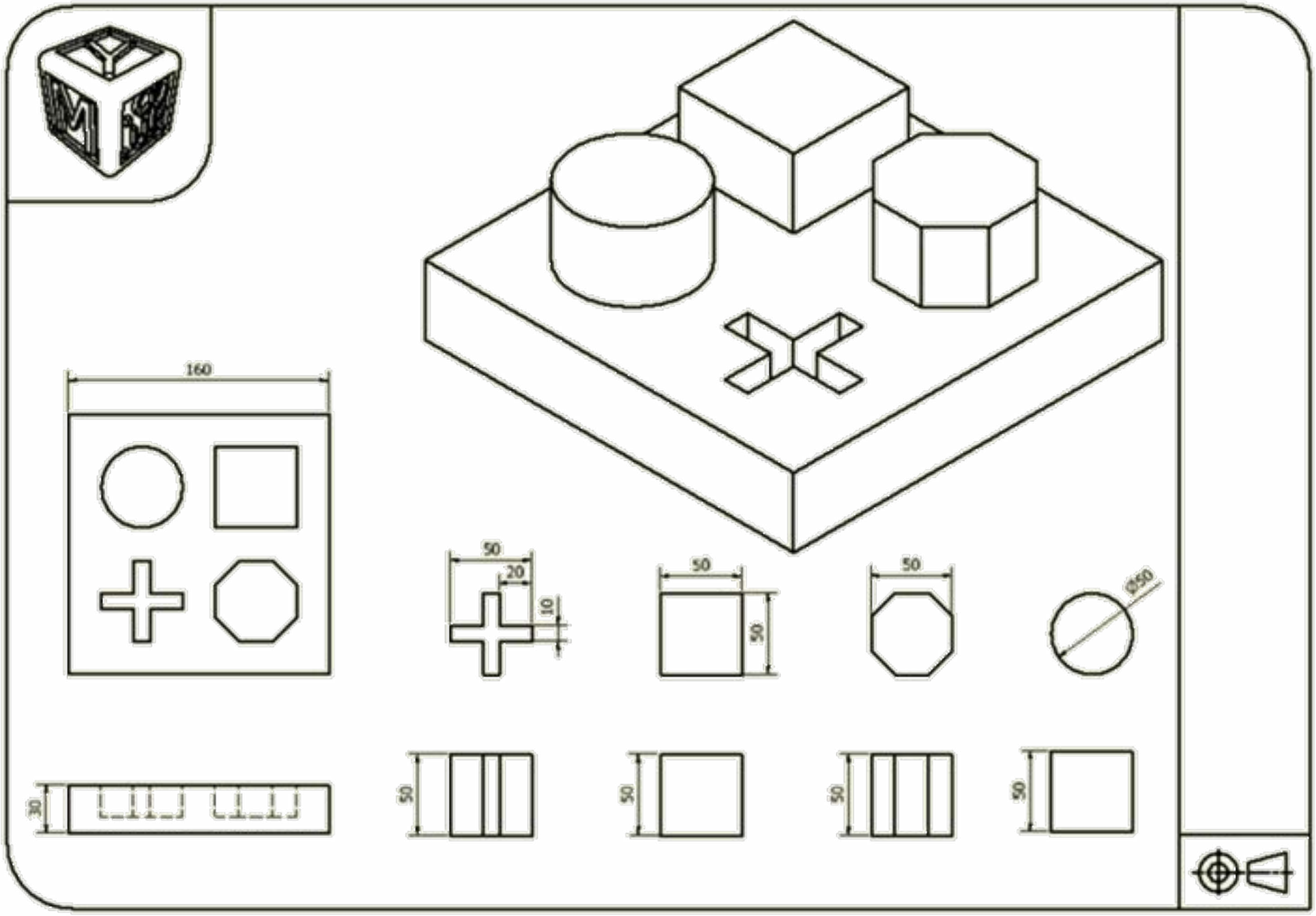
3D cinema glasses case	◆ Orthographic drawing ◆ Sectional work ◆ True shape and surface development ◆ Promotional DTP ◆ Scale
Mobile phone wall charging device	◆ Orthographic sketching ◆ Dimensioning ◆ Exploded pictorial sketching ◆ Illustration and rendering
Child's toy	◆ Pictorial assembly ◆ Orthographic assembly ◆ Materials rendering
Wall display	◆ 3D CAD modelling ◆ CAD pictorials ◆ Describing and explaining CAD terms and commands ◆ Planning and producing an instructional leaflet
Healthy living statistical graphic	◆ Plan and produce a statistical graphic using DTP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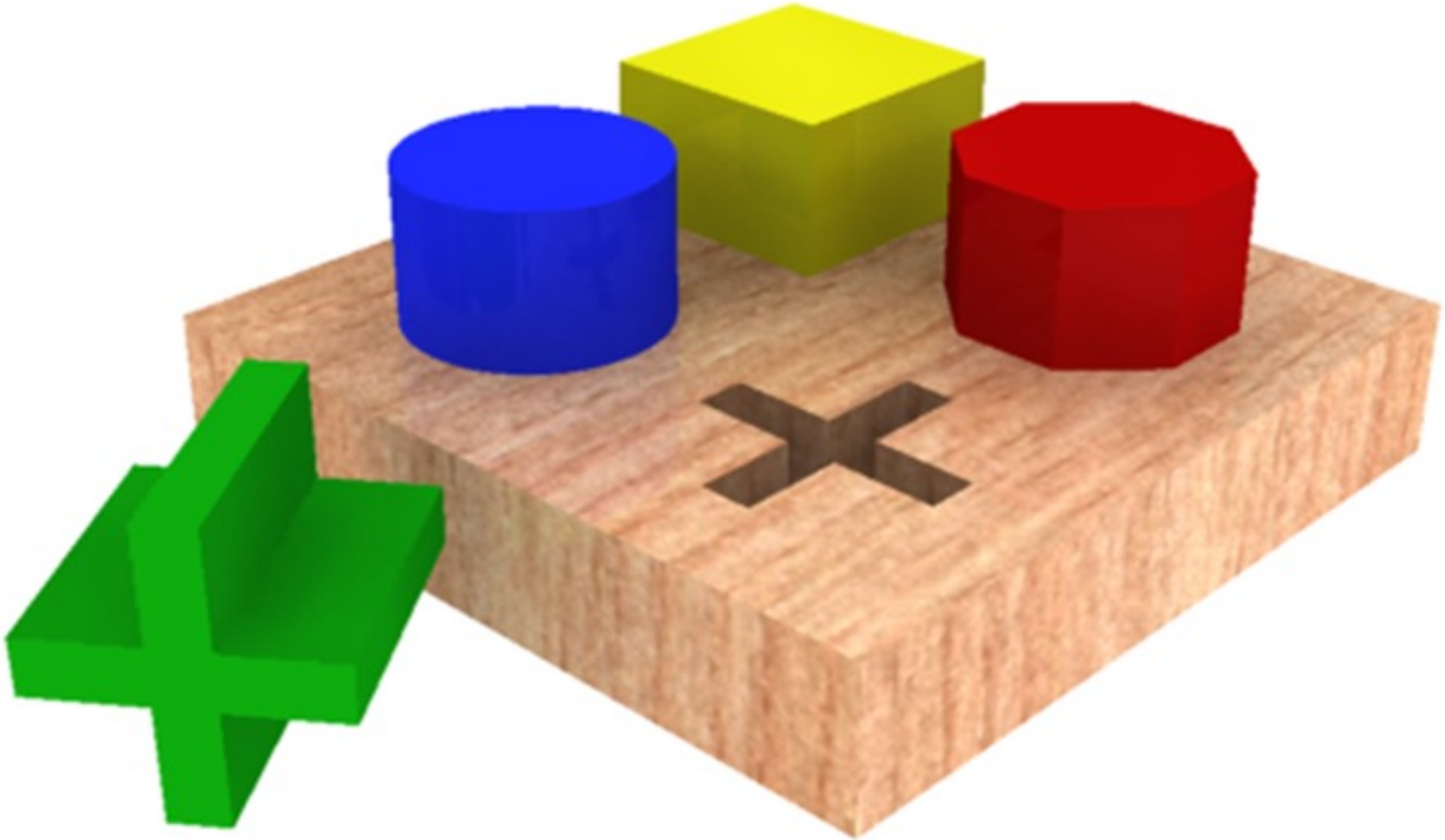

Toys 'n' Games
www.youngminds.co.uk
THE CAT IN THE HAT
by Dr. Seuss
Fun toys, games, and much more that help your child's development....

Business Card

Sales Charts

Magazine article

Poster

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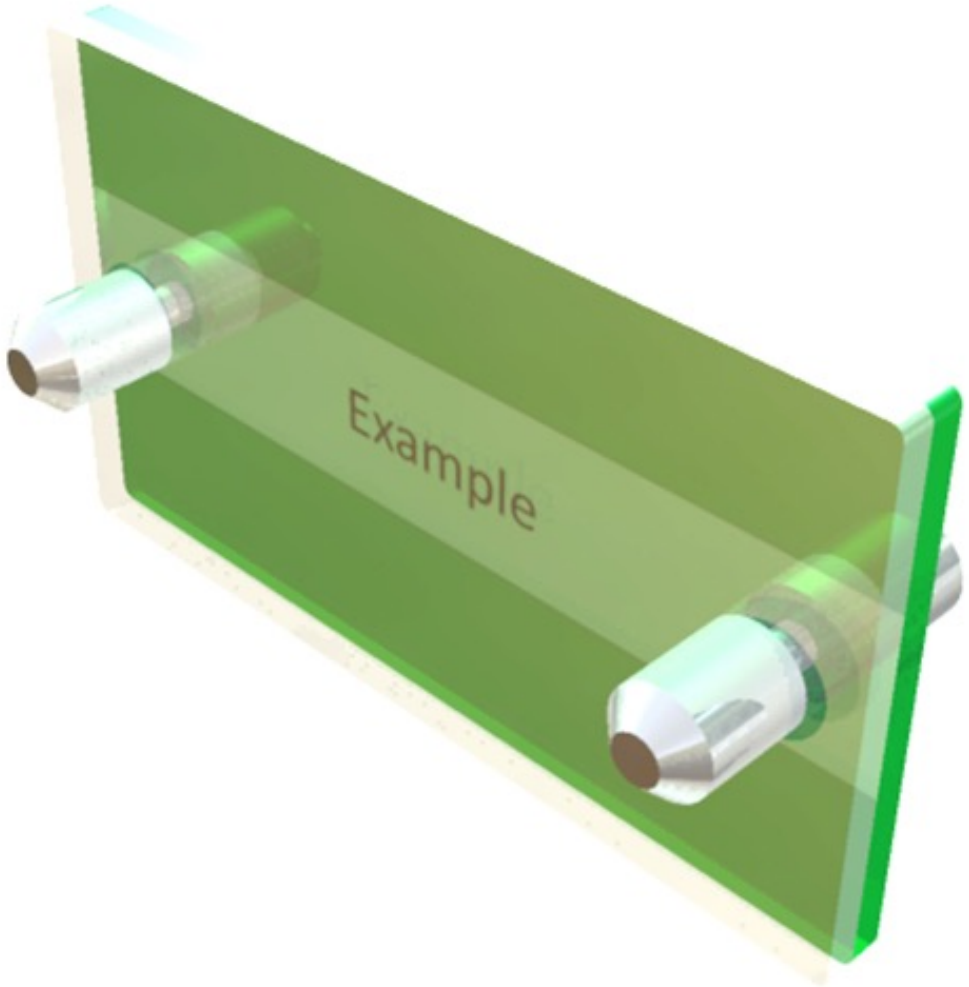
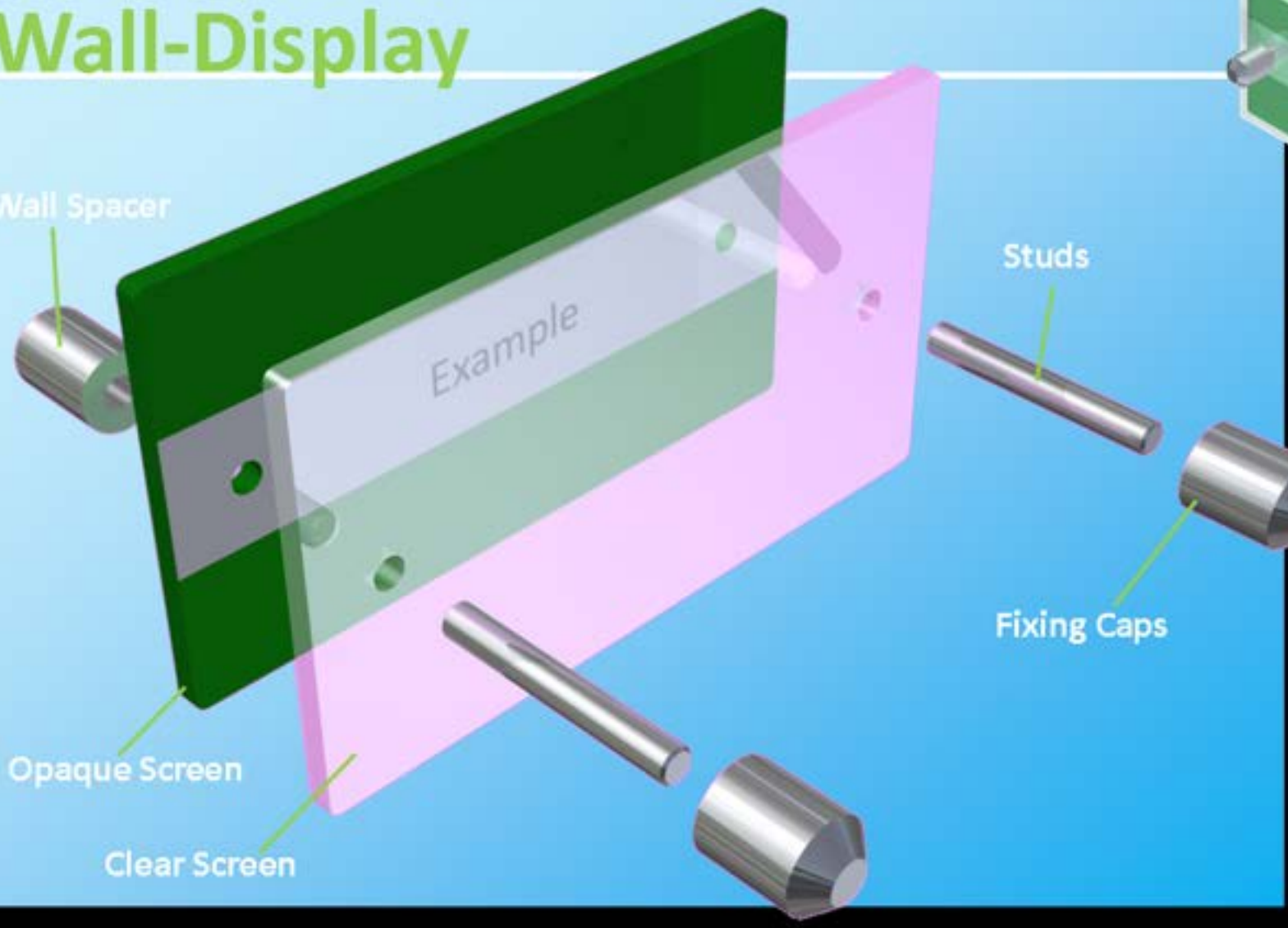
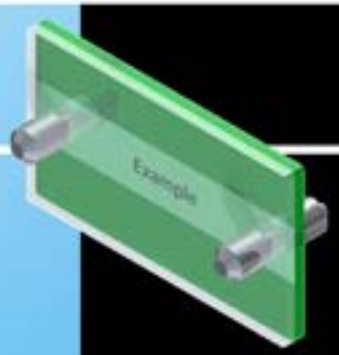

Example

Wall-Display





Wall Display

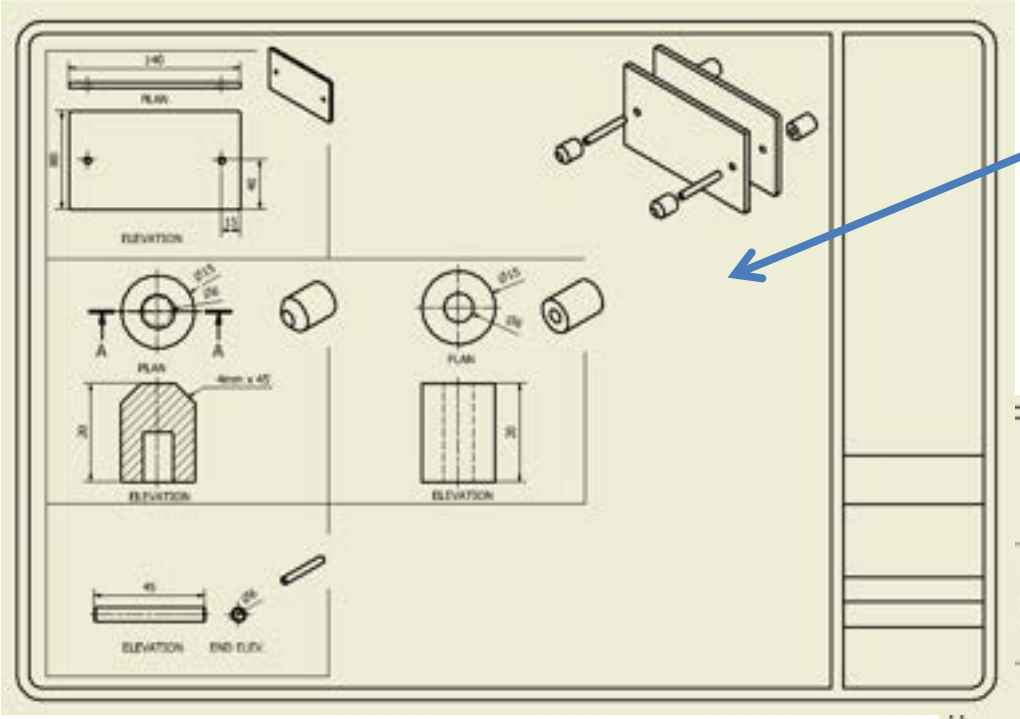
is easily to assemble by drilling the holes in your wall, using the screens as jigs to marks the hole positions.

Then simply fix the studs into the holes you have drilled.

Next place the wall spacers over the studs followed by the screens and fixing caps as shown in the diagram opposite.

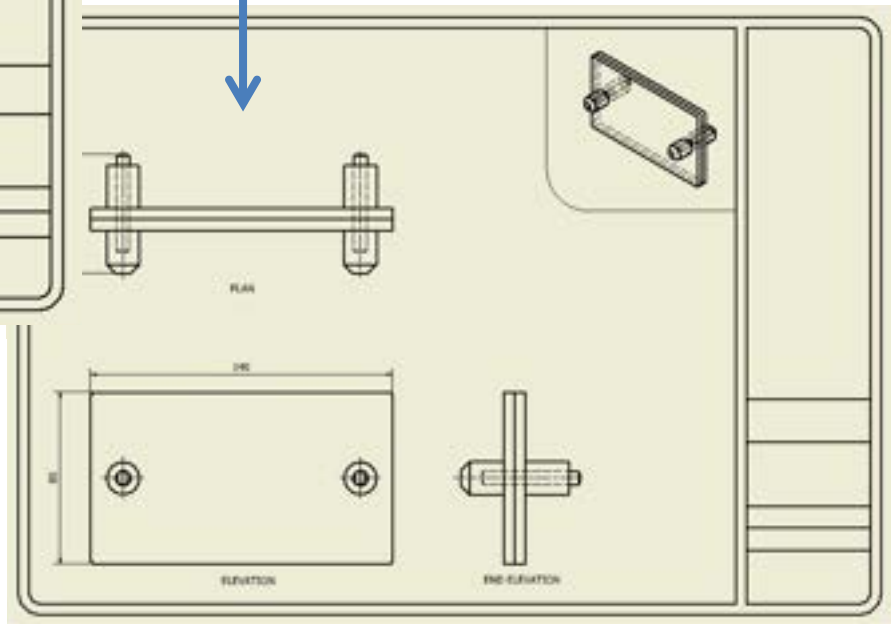
You can place the information you wish displayed inbetween the plastic screens for a stylish house number or office sign.

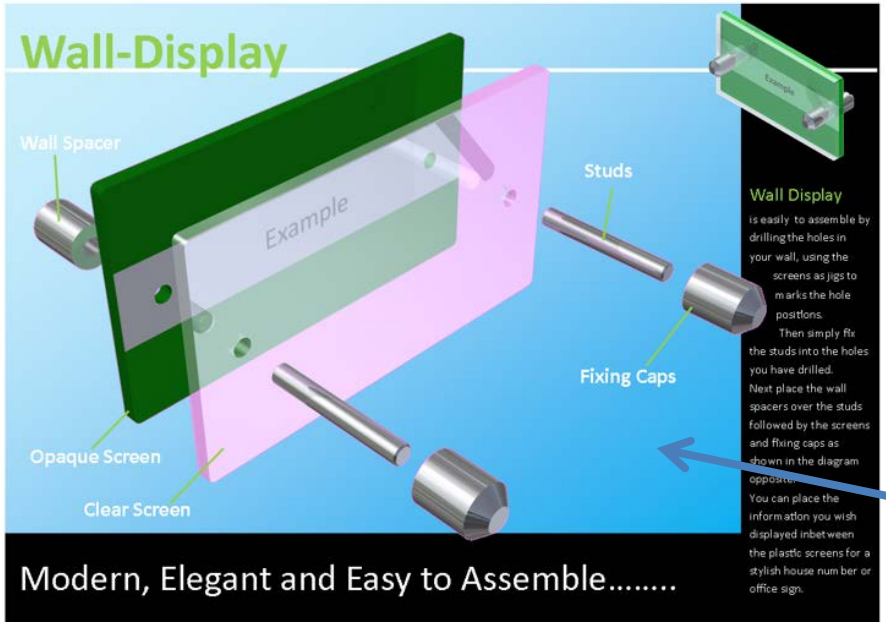
Modern, Elegant and Easy to Assemble.....



Components

Assembled





DTP advert/instructions

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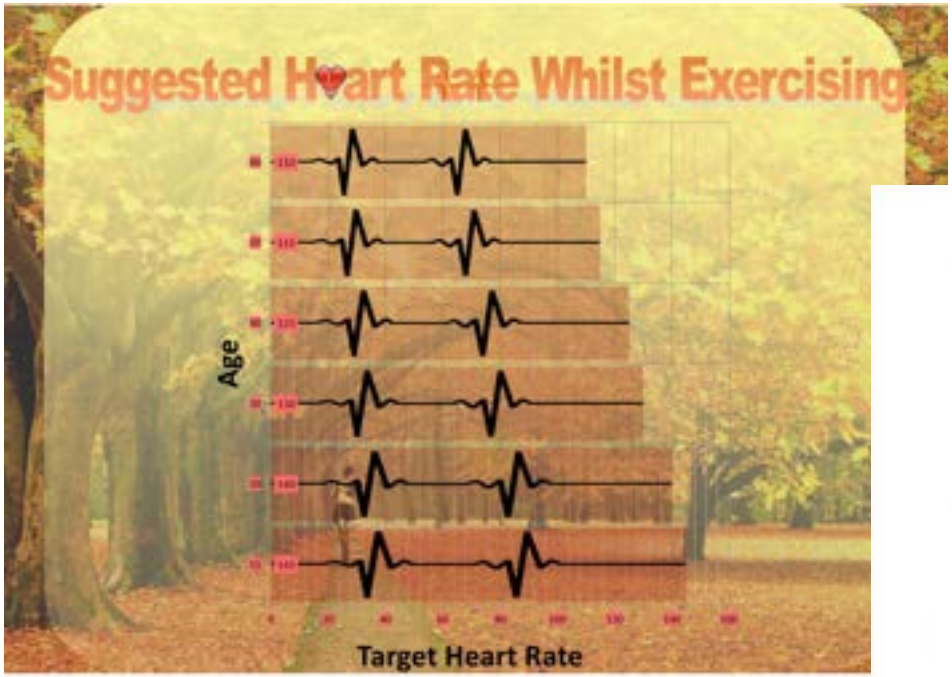
Healthy living statistical graphic	◆ Plan and produce a statistical graphic using DTP


Suggested Heart Rate Whilst Exercising
Age
Target Heart Rate

The Balance of Good Health
Fruit and vegetables
Bread, other cereals and potatoes
Foods containing fat
Foods and drinks containing sugar
Milk and dairy foods
There are five main groups of valuable foods

Burning Calories Chart

National 4 – Added Value Unit

Added Value Unit

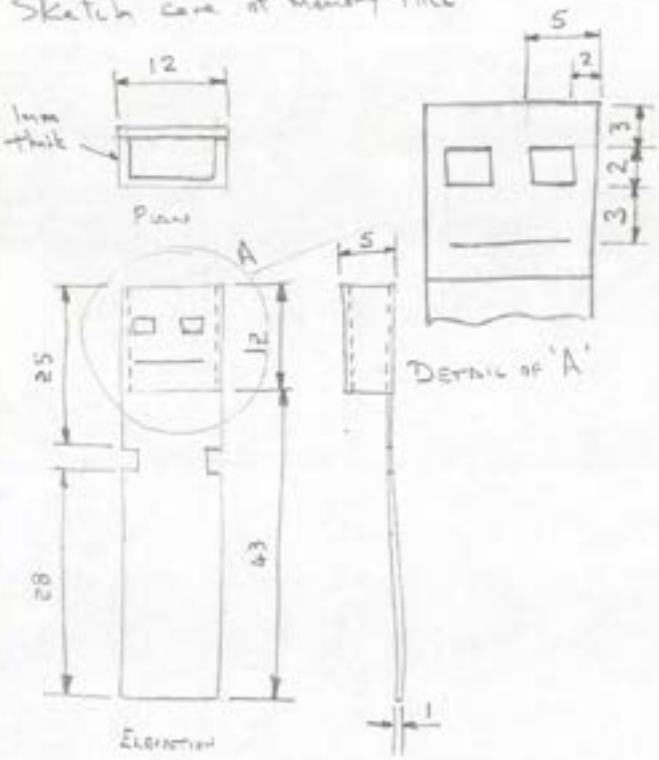
- Individual assessment, assessed internally.
- Open book assessment – Electronic and/or Manual (amount of help considered during marking)
- Brief set by SQA
- Pupils analyse the brief, conduct research and produce 'meaningful graphic items' over a period of time.
- Pupils evaluate their work afterwards against the original brief.

N4 Added Value -

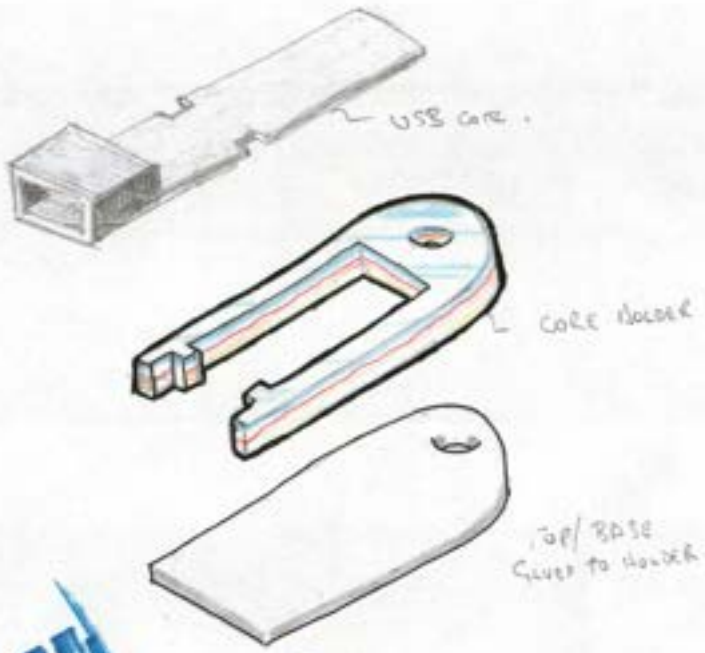
Folio of evidence must contain:

- No more than nine A3 pages (including the evaluation):
  - Confirming and developing the requirements of the brief and investigations (one A3 page)
  - Idea generation and producing preliminary graphics (1–2 A3 pages)
  - Developing preliminary ideas into preliminary, production and promotional graphics (4–5 A3-sized pages)
  - Identifying strengths and weaknesses of the final presentation relative to the brief (one A4-sized page)

Sketch case of memory stick



Stick and possible components



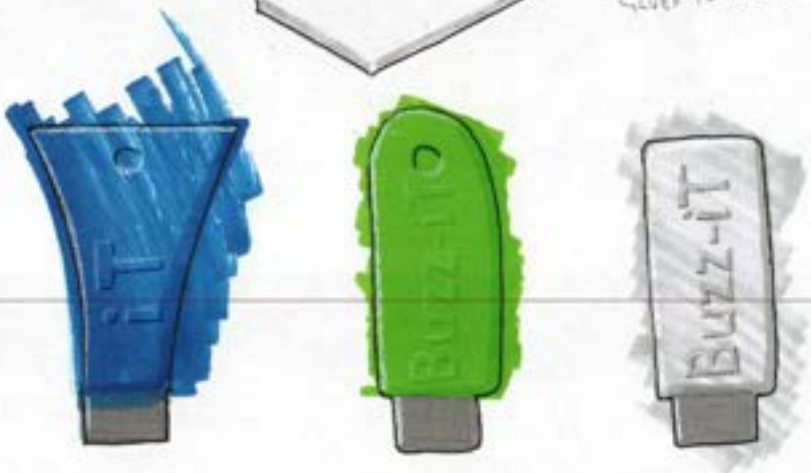
Colours:- 18-30 Target

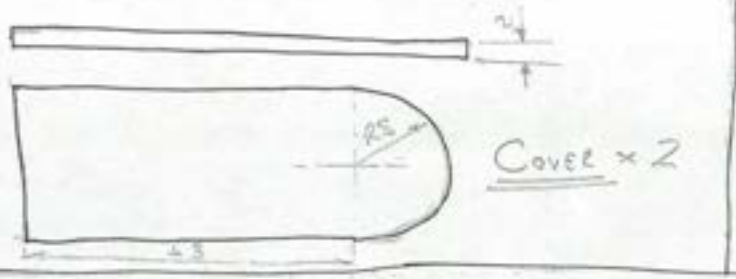
Stylish - White / Silver - Belong to iPod user

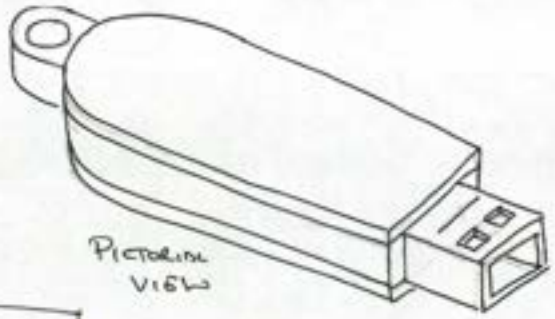
Blues - Dependable / Serious / Trustworthy

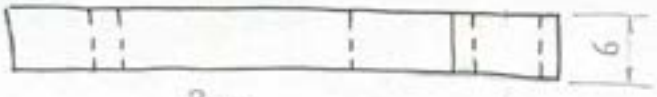
Green - Recyclable / Re-use / Natural

Silver / Grey - Technology / International

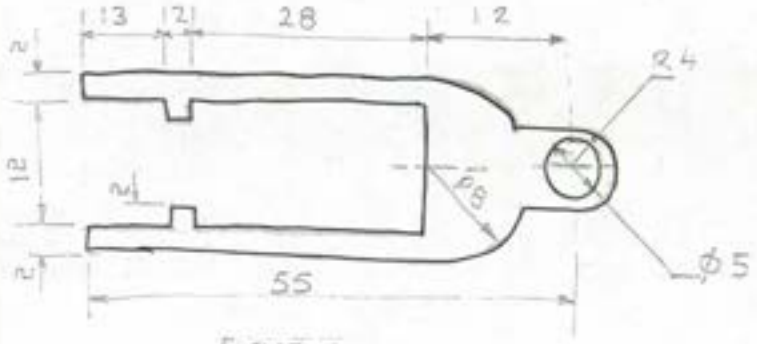








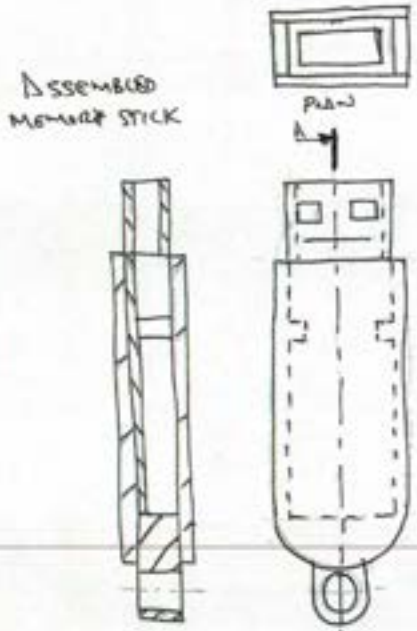
Plan



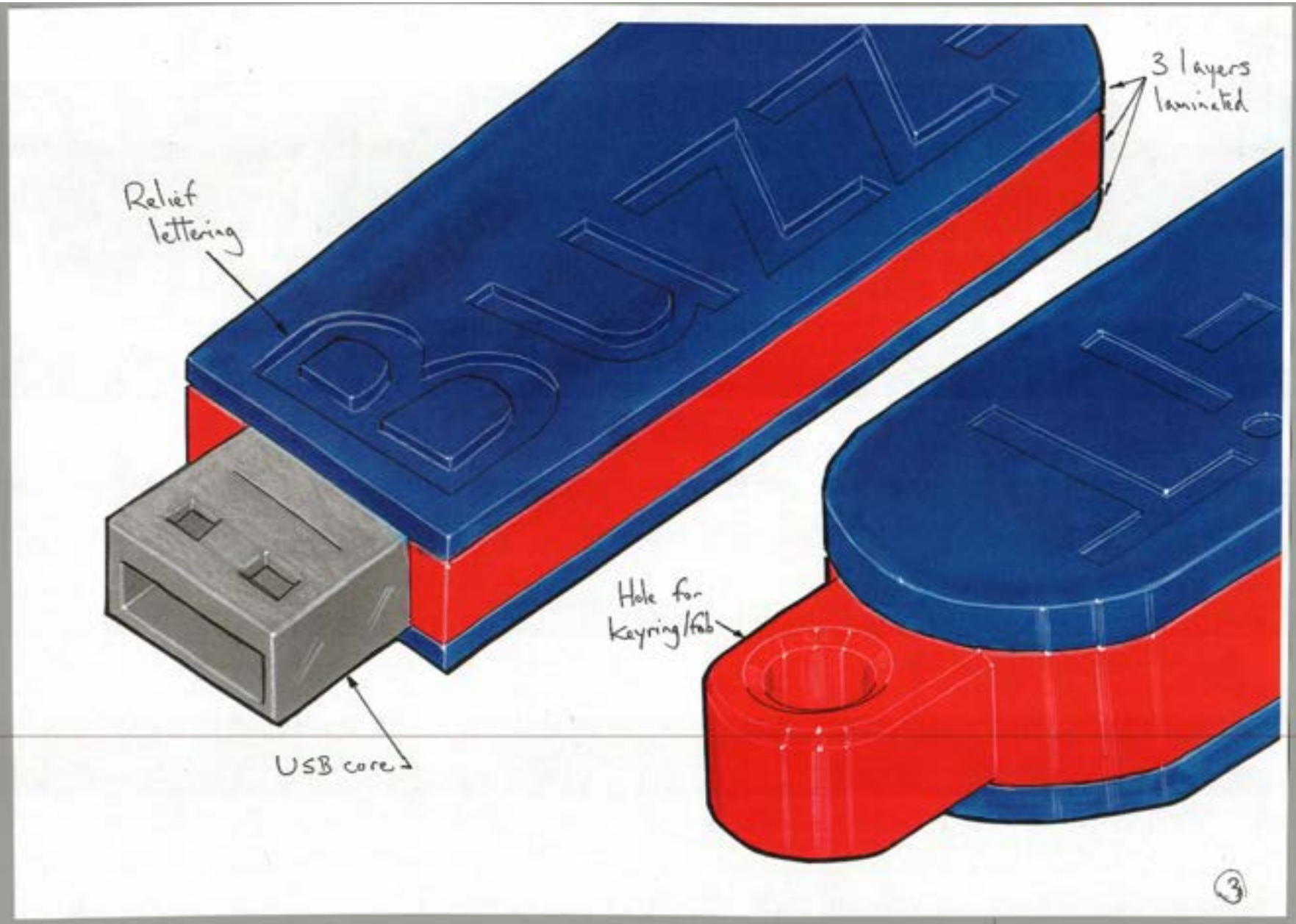
Elevation

End elevation

Core Holder



Memory Stick - Buzzit - Feb 2014 - U.I.S. - Mk 5 Cover Assembly

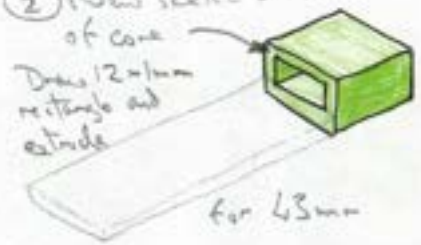

3 layers laminated
Relief lettering
Hole for keyring/fob
USB core
3

Modelling Plan

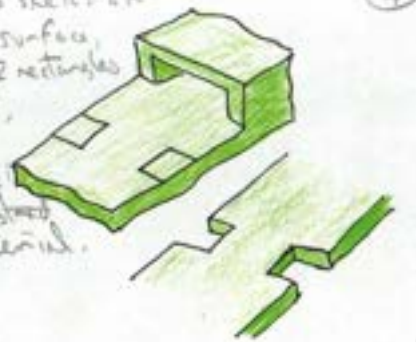
USB case

1. Draw a sketch 12×5, offset 1mm inside and extrude for 12mm

2. New sketch on end of case. Draw 12×1mm rectangle and extrude for 43mm



3. New sketch on new surface, draw 2 rectangles 2×2, then extrude to subtract material.

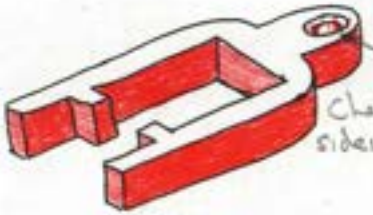


4. New sketch on top surface, draw 2×3 rectangles and extrude to subtract. New sketch + draw 8mm mm hole.

Case Holder

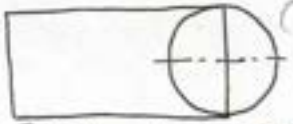
1. Draw sketch of Elevation of case holder using line, circle tools.

2. Extrude to 6mm



USB covers

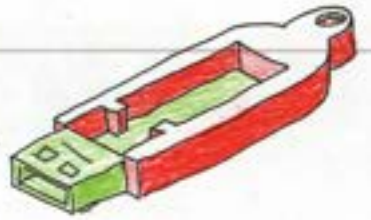
1. Draw sketch rectangle 43×16, add Ø16 circle to one end.



2. Extrude both for 2mm
3. Chamfer top edges for 0.5mm

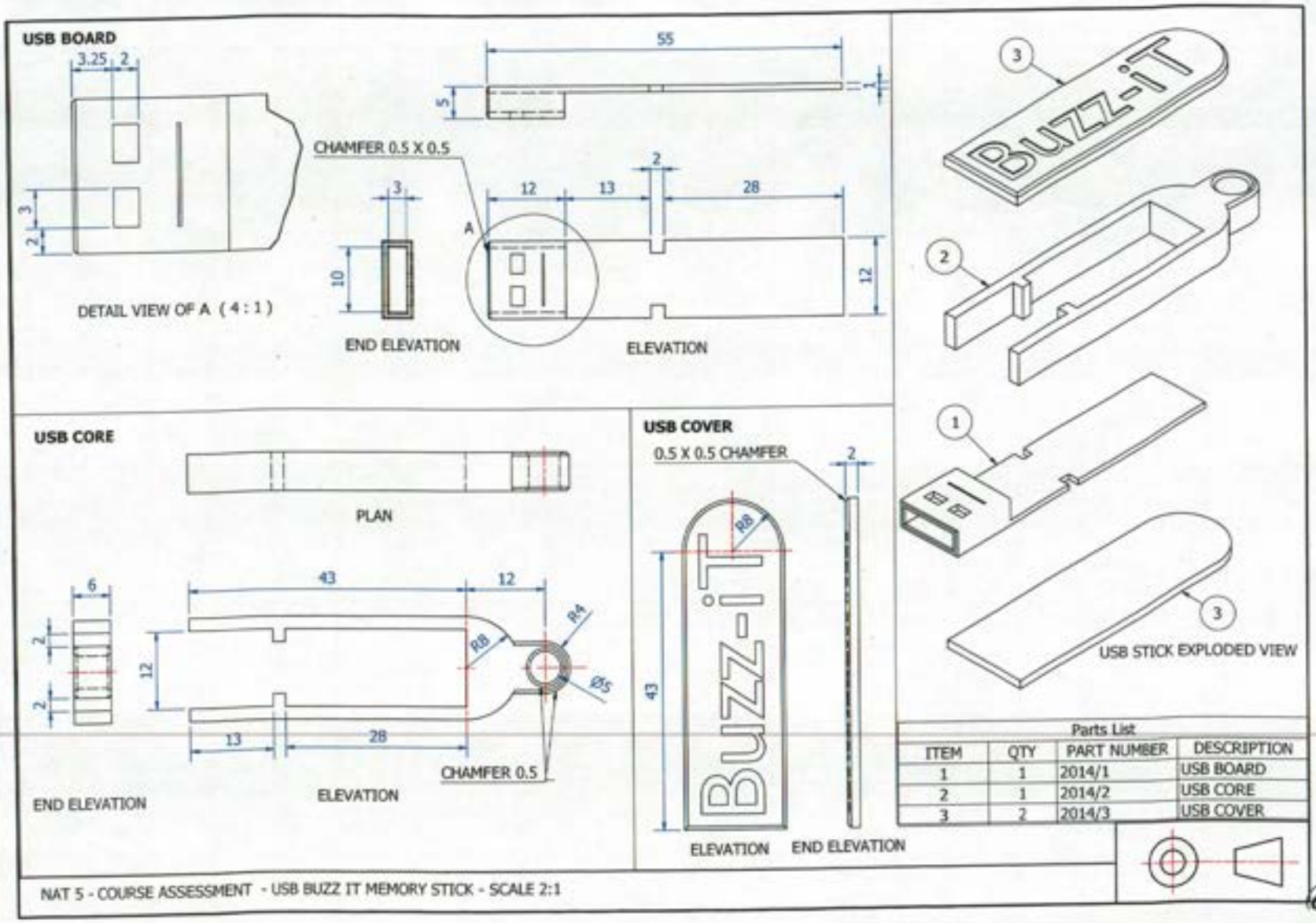
Assembly.

1. Open USBcase as base component, add case holder and constrain these together



2. Add 2 covers and constrain to holder

4. New sketch and add Text Bu22-1T, extrude into surface for 0.25mm



Parts List

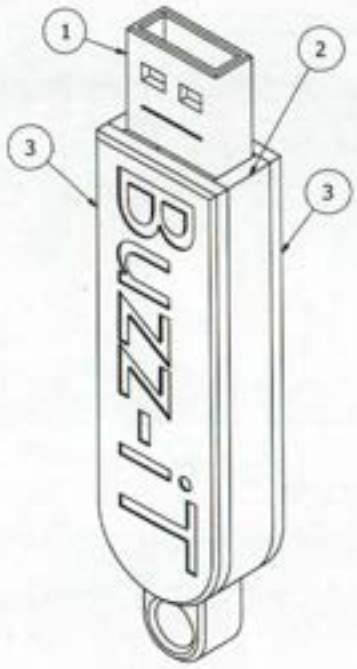
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	2014/1	USB BOARD
2	1	2014/2	USB CORE
3	2	2014/3	USB COVER

PLAN

END ELEVATION

ELEVATION

SECTIONAL END ELEVATION ON B-B (5:2)

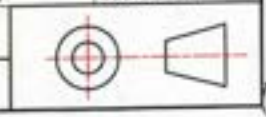


ISOMETRIC VIEW

PICTORIAL CUT AWAY

Parts List

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	2014/1	USB BOARD
2	1	2014/2	USB CORE
3	2	2014/3	USB COVER



NAT 5 - COURSE ASSESSMENT - USB BUZZ IT MEMORY STICK ASSEMBLY DETAILS- SCALE 5:2

Buzz-iT

Thumbnail Sketches for Bus Panel

Notes on Brief

Young/ish target market 18-30
Appeal to all genders
Ad space on bus 3000 × 500.
To include: product name
strap line/slogan
product
positive images/tech

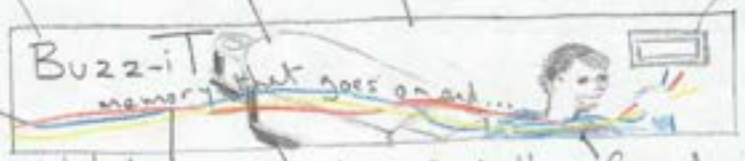
Text left justified

White background

Background image bleed

Orthorview of stick

Coloured lines to create flow/depth



Flow text to lead eye

Drop shadow for depth

Cropped image + bleed

Grey repeating text in background to create depth

Symetrical balance

Cropped + bleed image

Shadow under stick

Cropped + bleed image

Pale yellow background creating strength with main image

Main image cropped + bleed

Text right justified

Colour schemes

Symmetrical layout feels!

Main image.

Flow text

Cool blue, recessive background

Cropped image.

Image flipped and bleed

Flow text

Draft

Changes to draft include: new image of memory stick used with black background (including reflective surface), lines adjusted, flow text moved to suit, Buzz– iT font size increased and slogan changed.

Final layout

National 5 – Assignment & Exam

Assignment 40marks (End Jan till Mid March)

- 8 Hours in total, closed book exercise.
- Assessed externally by the SQA.
- Brief set by SQA, different every year.
- Pupils analyse the brief, research and produce 'meaningful graphic items'.
- Pupils evaluate their work afterwards against the original brief.

Exam 80 marks (10th May 2018)

- Knowledge/ Theory – based exam paper (no technical drawing).

N5 Assignment -

3 sections:

- Production Graphics

  (Computer 3D Modelling and Drawings)

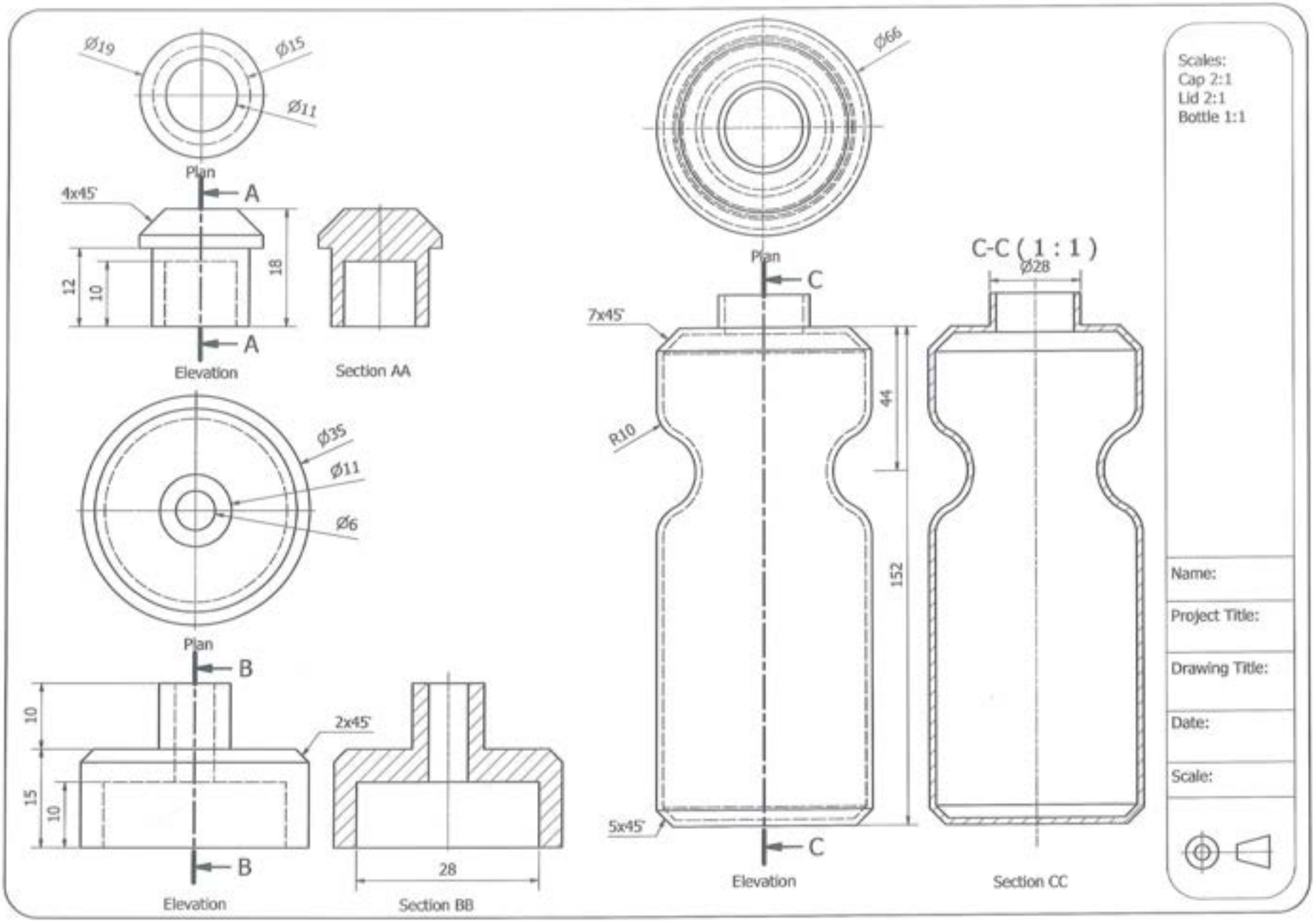
  15 marks

- Promotional Graphics (DTP and Illustration)

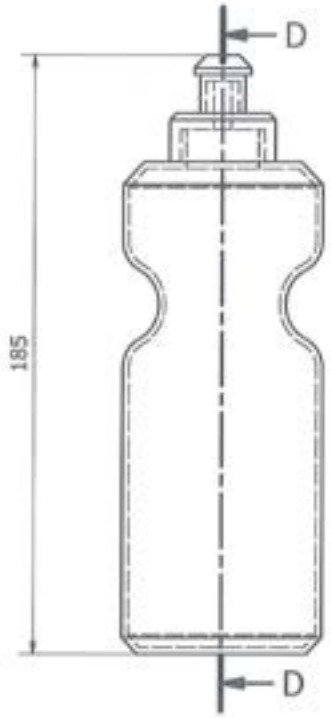
  15 marks

- Manual Graphics (sketching and rendering)

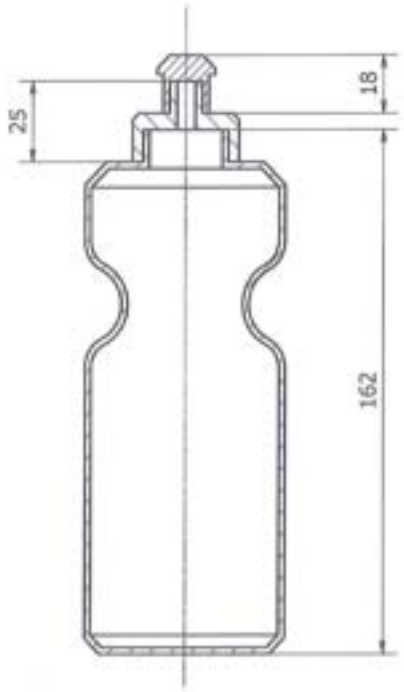
  10 marks


Ø19
Ø15
Ø11
Plan
4x45°
A
12
10
18
A
Elevation
Section AA
Ø35
Ø11
Ø6
Plan
B
10
15
10
2x45°
B
Elevation
28
Section BB
Ø66
Plan
C
7x45°
R10
44
152
5x45°
C
Elevation
C-C (1 : 1)
Ø28
Section CC
Scales:
Cap 2:1
Lid 2:1
Bottle 1:1
Name:
Project Title:
Drawing Title:
Date:
Scale:

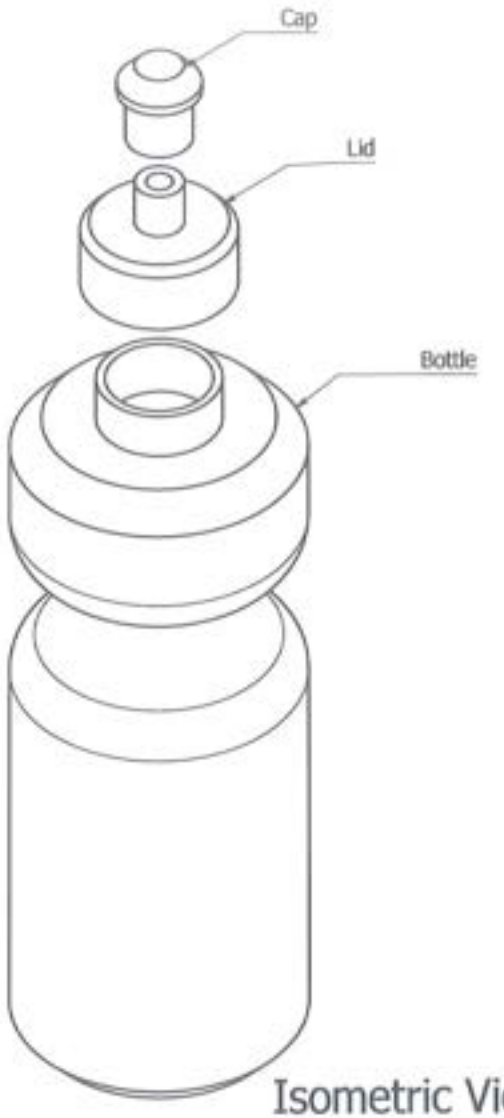
Plan



Elevation



Section DD



Isometric View

Scale:
Ortho 2:3
Exp. Iso 1:1

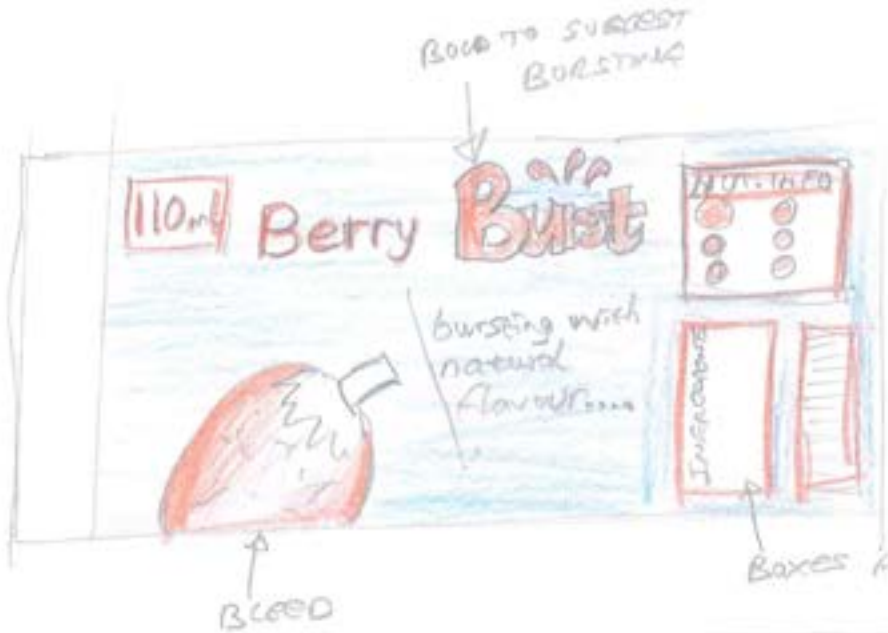
Name:

Project Title:

Drawing Title:

Date:

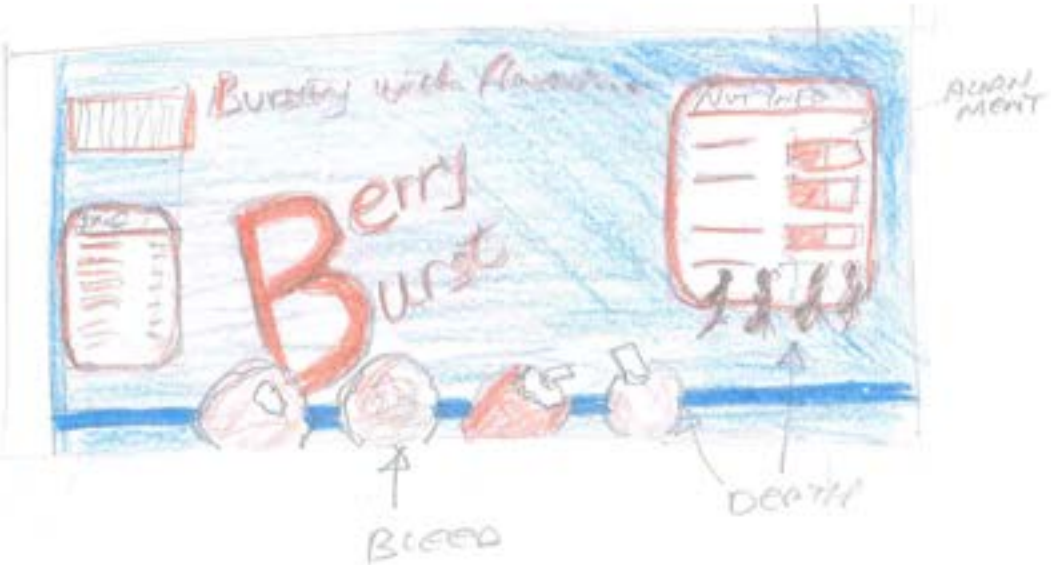
Scale:



① ASSYMETRIC LAYOUT:
* Focal point offset by dominant Strawberry
* Unity used by wrapping text (bursting with flavour) around strawberry and also using same "right right" colour scheme red & white.
* Depth is lacking on this design.
* Alignment of "Boxes" applied.

2) SYMMETRICAL LAYOUT

* NAME/BRAND IS THE FOCAL POINT
* UNITY CREATED BY PROXIMITY OF BERRYS AND NAME AND BY USING THEMED COLOUR SCHEME
* CONTRAST CREATED OF RED AGAINST COOL BLUE BACKGROUND.
* DEPTH CREATED BY OVERLAYING



Design Elements Used:

Line: I used a coloured line going across the bottom of the bottle to connect all the areas of information and images. I also outlined the info bars to define and emphasise them.

Shape: I used two rectangles with rounded corners to create space/frames for the information.

Colour: I used a lot of red features to link with the berries used and create a consistency of brand.

Size/Mass: I gave the Brand Name the biggest sizing of any element so that it stood out. I also gave it mass by adding the drop shadow.

Value: I used different value of red in the brand name to create interest.

Design Principles Used:

Balance: I have opted for a symmetrical balance as when the bottle is displayed on the shelf the customer will only see the front half.

Contrast: I angled the text of the Brand Name to make it stand out against the body text.

Unity/Proximity: The Brand Name and associated berries flavour image are close to each other to create a visual link. Also I used red in most elements which helps create unity throughout the design.

Emphasis: I made the Brand Name much larger than any other text so as to stand out and create the focal point.

Rhythm: I repeated the use of red throughout the design to maintain the same style/branding. I also only repeated the font used to achieve consistency of look.

Alignment: *As noted on the annotations*

White Space: I left white space on other side of the title and image of berries to allow the eye a visual break from the information on back of label.

I have used a 5mm margin

I have used left alignment to align the slogan with the Title of the Brand. This creates a neater more professional look.

I have angled the focal point of the Brand Name to create more interest, contrasting with the horizontal text of the rest of the design.

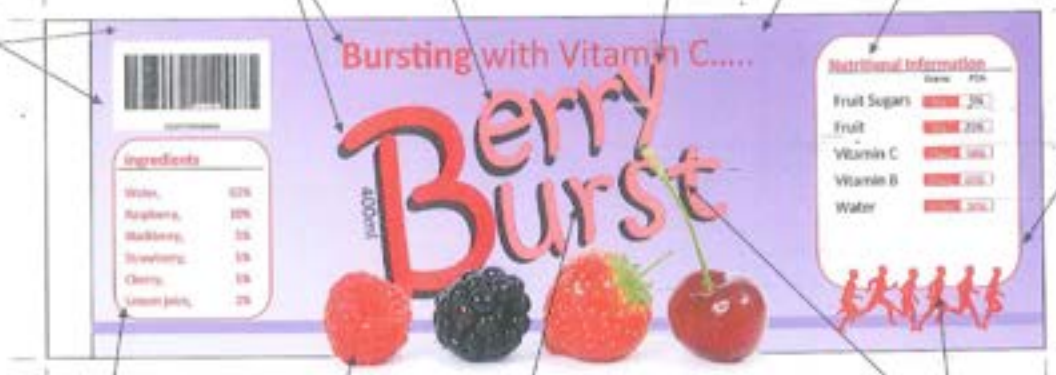
My use of different values of colour for the text allows the eye to focus on the B in the Brand Name, and also creates interest.

I used a gradient fill on the background of the label to add interest and movement. I also used purple to allow the red colour in the brand name to advance.

I have tried to create unity by using the following techniques:

- Red in the body text, and altered the image of the runners to red also, to link with the theme of the Red in the Brand Name.

I also used a 'rounded' font in the Brand Name and 'rounded' boxes to link with the rounded shape of the berries in the flavours.



I used left alignment on the list of ingredients to provide a neater edge to the body text, as well as right alignment on the %'s for same reason.

This was not full justification as I spaced out the information to keep the neat look I desired.

I bled the image off the edge of the label and cropped it to fit. I also removed the background colour of white to allow the gradient fill to show.

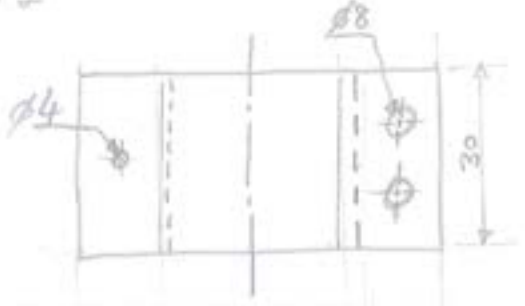
I used a dropped shadow on the text of the Brand Name to further add depth and allow the Brand Name to stand out.

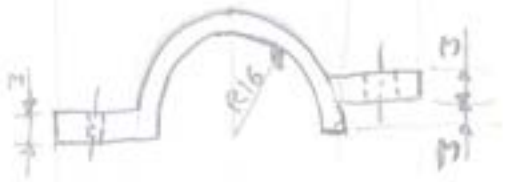
I have tried to create depth in the design by overlapping the images with other elements. I used the runners image to help link the product with the companies intended market of Healthy Lifestyles.

Berry Burst

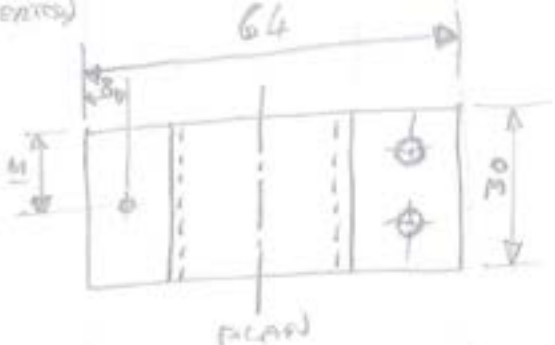
Bursting with Vitamins!

PART 1

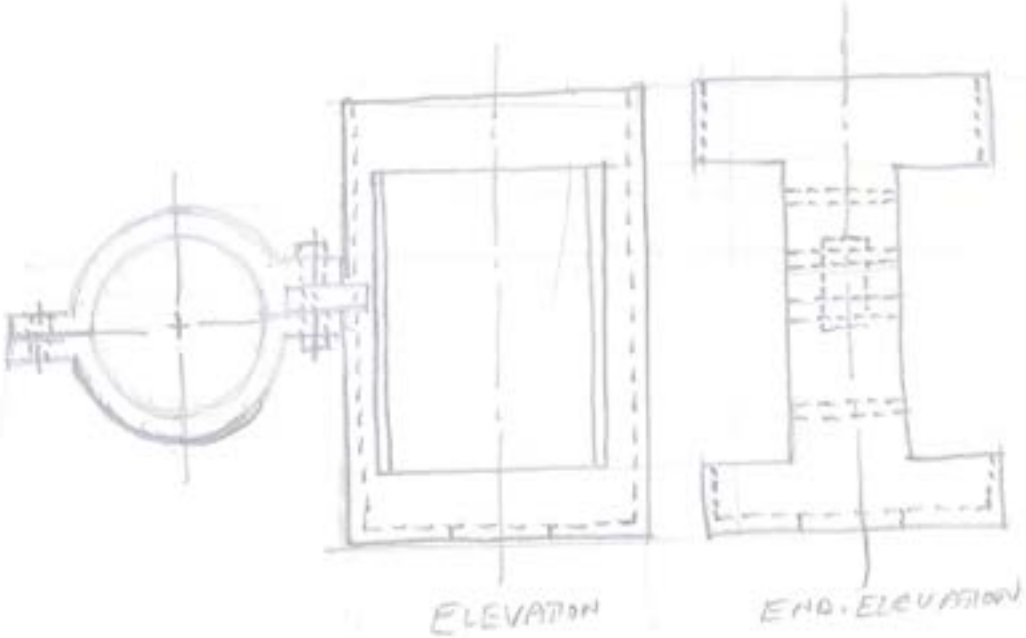


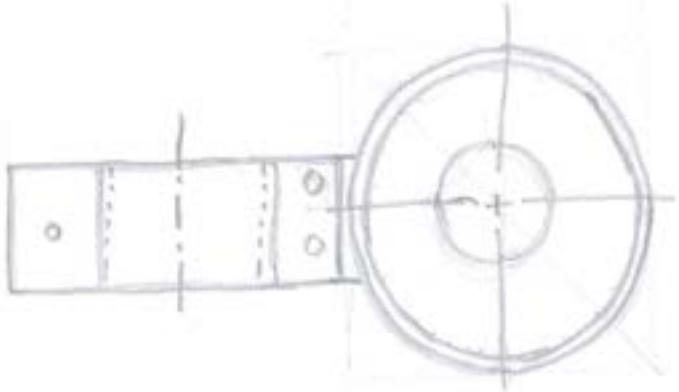


PART 2
(INVERTED)



ASSEMBLY





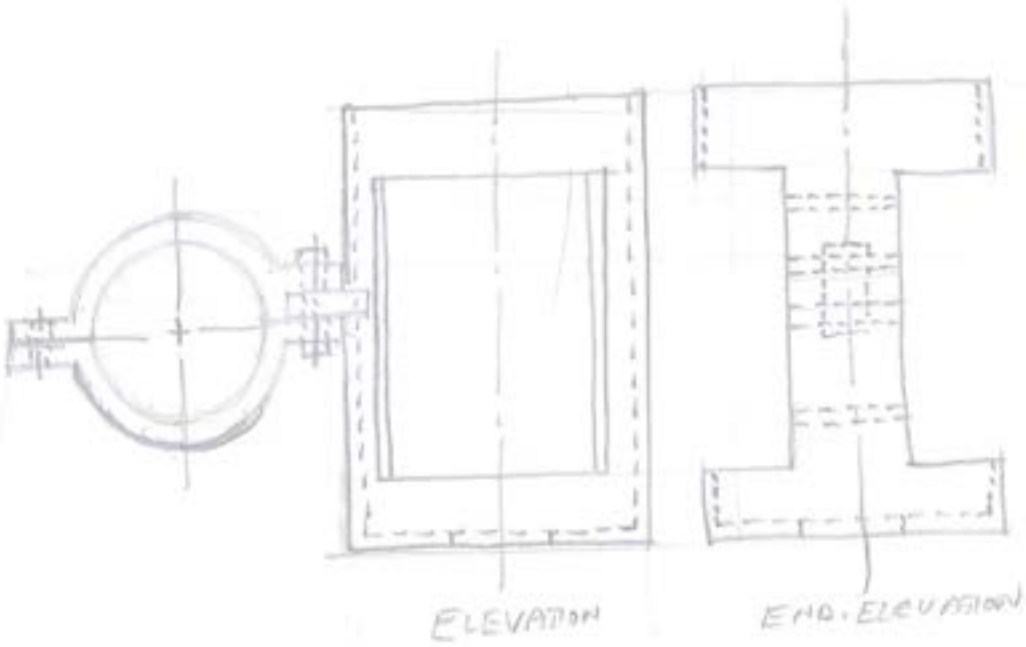
NAME:
E. XAMPLE

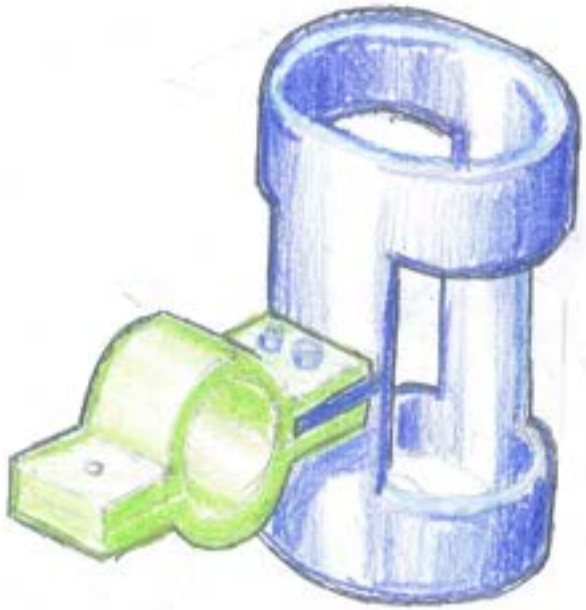
MANUAL
ORTHOGRAPHIC

NAFS G.C.

COURSE ASS.

Assembly


ELEVATION
END. ELEVATION
PLAN
NAME:
E. XAMPLE
MANUAL
ORTHOGRAPHIC
NAFS G.C.
COURSE ASS.



Exam 80 marks

Knowledge/ Theory – based exam paper (no technical drawing).

Area	Range of marks
Computer-aided design techniques	15–20
Graphic items in specific situations	8–10
Manual and electronic methods of graphic communication	6–14
Spatial awareness	12–17
Drawing standards, protocols and conventions	10–17
Use of colours, layout and presentation techniques	15–20

What you as parents/guardians can do to help…… a summary!

- Ensure any homework/revision is done using the checklist in their folder
- Read pupils notes and ask them questions about the various terms/words/topics
- Get pupils to make flash cards of topics and information. Then test them on the flash cards.
- Whenever you see a graphic in a magazine or newspaper etc., ask your child to explain what the various bits that make it up are and what their job is or how and why the designer used them
- Regularly discuss what they have done in class and ask them questions about it

How To Pass Evening Graphic Communication National 4/5 - Theory/Knowledge

Course content:

The course covers various aspects and can be divided into the following areas.

The 3 P's – Preliminary, Production and Promotion

- The importance of graphics worldwide and how its used in industry and construction.
- Selecting the right type of graphic.

Drawing Standards – British & International Standards, Dimensioning

- Symbols
- Conventions
- Projection Methods
- Styles
- Rules
- Application

2D Drawing Techniques

- Geometry – inc. tangency
- Specialised views – surface developments, true shapes, sectional drawing.
- 2D drawing using CAD

3D Drawing Techniques

- Styles of Pictorial Drawing – Isometric, planometric, oblique, perspective.

Construction Drawing

- Main Drawing Types – location, site and floor plans, elevations.
- Standards and Conventions – scales, symbols, sections.
- Illustrations - marketing

Computer Graphics – Hardware, Software and Safety

- Benefits – specs, uses, types of computer
- Computer technology– hardware, software, applications
- File management - storage and security
- Glossary – useful terms, understanding the language

Computer Graphics – 2D CAD

- 2D CAD – applications, who uses it
- Drawing Method– grid and snap, layers, drawing tools, editing, commands etc.

Computer Graphics – 3D CAD

- CAD in industry – applications, manufacturing, testing, illustrations
- 3D Modelling – extrude, revolve, shell, array, chamfer fillet and other commands etc.
- Glossary – useful terms, tools, editing commands.
- Assemblies – components, constraints
- Advanced 3D modelling – helices, tapers, lofts

Computer Illustration

- Applications – who does it?
- Resolution – pixels, bitmaps, raster, vectors
- Illustration features – Materials, colours, lights, decals
- Glossary – useful terms
- 2D CAD illustration – tools, effects, layers.

DeskTop Publishing, DTP

- Benefits – publishing, printing, the graphic designer
- Page structure and layout – terminology
- DTP tools, effects and features – transparency, drop shadow, flow text, cropping, bleed, text wrap, glossary
- Typeface – serif, sans serif, target markets
- File types – vector, BMP, JPEG, PNG

Design Elements and Principles

- Creative Skills and Techniques – alignment, balance, contrast, depth, dominance, harmony, line, shape, unity

Colour

- Colour Theory – colour wheel, warm & cool, advancing & receding, contrast & harmony, tints & Shades
- Colour and Mood – colour families, moods & feelings