Design & **Visual** Communication

Year 9
DVC Exercise Booklet

Name: _____

Waiopehu College
2016

PROGRAMME 2016

WEEK	CONTENT	ACTIVITY	SKILLS	ASSESSMENT	DATES
1	Intro				1 Feb – 5 Feb
2	Set Square practice (shapes)	Exercise Booklet	4, 7		8 Feb – 12 Feb
3	Set Square practice (Ortho)	Exercise Booklet			15 Feb – 19 Feb
4	Set Square practice (Ortho)	Exercise Booklet			22 Feb – 26 Feb
5	Project Brief One	Research		Gra. Practice	29 Feb – 4 Mar
6	Personal Logo	Concepts	1, 2, 5, 7		7 Mar – 11 Mar
7		Development			14 Mar – 18 Mar
8		Tech Drawing			21 Mar – 25 Mar
9	Oblique drawing	Sketching	3, 7		28 Mar – 1 Apr
10	Isometric drawing	Sketching	3, 7		4 Apr – 8 Apr
11	Isometric drawing	Instrumental			11 Apr – 15 Apr
TERM ONE HOLIDAYS (18 April – 29 April)					
1	2 point Sketch	Sketching	2, 7		2 May – 6 May
2	Rendering/Colour (4 medias)	Pencil / Chalk		Visual Communication	9 May – 13 May
3	Rendering/Colour (4 medias)	Pen / C. Pencil			16 May – 20 May
4	Project Brief THREE	Research	1, 2, 5, 6, 7		23 May – 27 May
5	Container House	Concepts		Knowledge of.	30 May – 3 Jun
6	Sketchup	Dev. Sketchup		Design Practice	6 Jun – 10 Jun
7	Sketchup	Dev. Sketchup			13 Jun – 17 Jun
8		Final + Eval	4, 7		20 Jun – 24 Jun
9	Orthographic projection	Exercise Booklet			27 Jun – 1 Jul
10	Orthographic projection	Exercise Booklet			4 Jul – 8 Jul
TERM TWO HOLIDAYS (11 July – 22 July)					

ASSESSMENT

The New Zealand curriculum has three main leanring outcomes for Design and Visual Communication. These goals are assessed in year 9 against three of your projects. Each brief you will recieve comes with an assessment schedule attached that will give you more detail into what you need to do to achieve at Level 4 - the level of Year 9 learning.

Visual communication (HOW)

Refers to the effective communication and presentation of design ideas using modeling and graphic design techniques.

Graphics practice (DOING)

Graphics practice refers to the creative application of drawing and design knowledge and techniques to develop conceptual outcomes that address a brief, or a technological outcome of a graphical nature.

Knowledge of design practice (THEORY)

Design practice focuses on developing conceptual designs in response to a brief. Knowledge of design practice includes understanding that designers see the qualities and potential of design ideas in terms of the principles of design (aesthetics and function).

SKILLS KEY

These are the skills that you will learn that underpin the skills needed in Design and Visual Communication. Where you learn each of these is shown in the timeline next to the project / activity.

1 – **Sketching**
2 – **Presentation**
3 – **Pictorial drawings and construction**
4 – **Orthographic projection and construction**
5 – **Design and Process (Graphics Practice)**
6 – **CAD**
7 – **Completion of work**

LEVELS OF LEARNING

WE ARE HERE

Reporting year 9	1	2 Working towards level		3 Working at level expected	4					
Reporting year 10			1	2 Working towards expected level		3 Working at level expected	4			
Reporting year 11					1	2 Working towards expected level		3 Working at level expected		4
Curriculum Level	< 3	**Operating at L 3** (expected level for 5 -7)	>3 <4	**Operating at Level 4** (expected level for a year 8 - 9 student)	>4 <5	**Operating at Level 5** (expected level for a year 10 student)	>5 <6	**Operating at Level 6** (expected level for a year 11 student)		> 6
Sketching		• Produce sketches • Objects are easily recognised.		• Produce sketches using **clean lines.** • Sketches use **parallel** line. • Objects are in **good** proportion. • **Guided by light crating boxes**		• Produce sketches using clean lines. • Sketches use **accurate** parallel line. • Objects are in good proportion. • Guided by light crating boxes • **Sketches have increased detail and form.**		create 2D and 3D freehand sketches that show in-depth design features in proportion relative to the context of the design brief to convey the intent of the design ideas. **(AS91063 Design and Visual Communication 1.30** *Produce freehand sketches to communicate own design ideas)*		
Presentation		• Uses colour staying within areas.		• Uses colour staying **closely** within the lines drawn. • Uses tonal change both **black** and white to show the form of the object. • Texture techniques **shows off** the material. • **Combines the above to add realism to simple objects**		• Uses colour staying **accurately** within the lines drawn. • Uses tonal change both black and white and **colour blending** to show the form of the object. • Texture techniques shows off the material to **enhance the detail.** • Combines the above to add realism to simple objects **and shapes.**		• skilfully apply rendering techniques to convincingly communicate shape and surface qualities, enhancing the realistic representation of design qualities to an audience • use rendering techniques to communicate the form of design ideas. • skilfully plan, select and apply presentation skills that are of a high quality showing accurate layout skills, and visual impact to tell a story. **(AS91066 Design and Visual Communication 1.33** *Use rendering techniques to communicate the form of design ideas)* **(AS91069 Design and Visual Communication 1.36** *Promote an organised body of work to an audience using visual communication techniques)*		
Pictorial drawings and construction		• Produces pictorial drawing using equipment. • Constructs line using ruler.		• Understands and uses a variety of **accurate** pictorial drawing using the **correct angles and proportions.** • Constructs drawing using construction and outline using **drawing equipment.** Range; isometric, oblique, perspective.		• Understands and uses a variety of accurate pictorial drawing using the correct angles and proportions. • **Can manage complex angles and curves and circles.** • **Uses for shorting in perspective.** • Constructs drawing using construction and outline using drawing equipment **with accurate** and **neat** line Range during year; isometric, oblique, perspective.		• produce accurate paraline drawings that show in-depth information about design features **(AS91065 Design and Visual Communication 1.32** *Produce instrumental paraline drawings to communicate design ideas)*		
Orthographic projection and construction		• Produces plans and elevations.		• Constructs **accurate** and **neat** line using **drawing equipment.** • **Uses projection for drawing layout of** plans and elevations • **Can generate a third view from two given views.** • Under stands and uses **a variety of** line types; construction, outlines, and centre lines		• Constructs accurate and neat line using **all** drawing equipment. • Uses projection for drawing layout of plans and elevations. • Can generate a third view from two given views. • Under stands and uses the **appropriate** line types; construction, outlines, and centre lines, **hatching, reference** • **Can produce simple auxiliary views and sectional drawings.** **Labels views and add material and constructional notes.**		• produce accurate instrumental 2D drawings that show in-depth information about technical features of a design **(AS91064 Design and Visual Communication 1.31** *Produce instrumental, multi-view orthographic drawings that communicate technical features of design ideas)*		
Design and Process (Graphics Practice)		• Produces ideas and produces a solution		• Thinks through the issues involved to produce **new** ideas. • Work is creative and **imagination** as a solution **and its presentation.**		• **Begins to use the design process within a given brief.** • **Understands the use of design language and begins to use appropriate language in the context of a brief.** • **Evaluates work to the brief and features.**		• explore and refine design ideas by considering possible alternatives; • integrate principles of aesthetics and function, and design judgements, in a coherent and connected way to develop design ideas; • convincingly communicate design ideas visually in accordance with the context specified in the design brief **(AS91068 Design and Visual Communication 1.35** *Undertake development of design ideas through graphics practice)* • select and research an influential designer • identify and explain the aesthetic and functional characteristics of their chosen influential designer • integrate aesthetic and functional characteristics of chosen influential designer when developing their own design ideas. **(AS91067 Design and Visual Communication 1.34** *Use the work of an influential designer to inform design ideas)*		
CAD		Experiments with tools		• Can produce images using **all** of the following tools. • Line types; Alignment, Combine, Join, Rotate, • Colour/texture, line, object, text, Manipulate • Manipulate shape; Alignment, Combine, Join, Rotate,		• Can produce images using all the basic tools and **explores new tools for the needs of the item being produced.** • Software appropriate • SolidWorks, Sketch Up, Archicad, Photoshop, Illustrator		CAD is incorporated into the above.		
Completion		• Work is presented.		• Work is **completed with gaps** in the portfolio. *Note: Completion is either by working very efficiently in class or finishing incomplete work as home work.*		• **Design briefs are completed as a set of drawings required by the brief.** with minor gaps *Note: Completion is either by working very efficiently in class or finishing incomplete work as home work.*		**Design briefs are completed as a set of drawings required by the brief.** With no gaps *Note: Completion is either by working very efficiently in class or finishing incomplete work as home work.*		

BASICS OF
DESIGN VISUAL COMMUNICATION
+
INSTRUMENTAL DRAWING EXERCISES

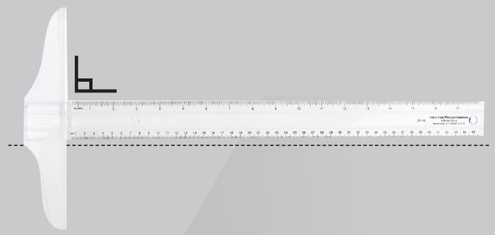
EQUIPMENT

NAME:

USED FOR:

NAME:

USED FOR:



NAME:

USED FOR:

- Mark the angles on the diagram

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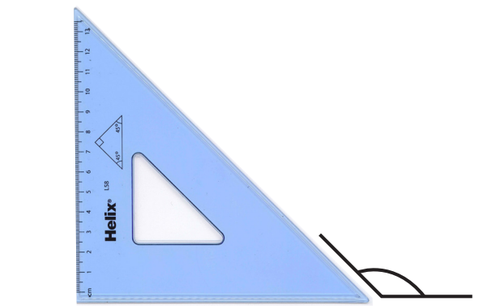
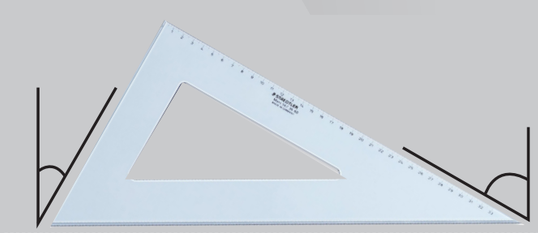
- Mark the angles on the diagram





NAME:

USED FOR:

- Mark the angles on the diagram

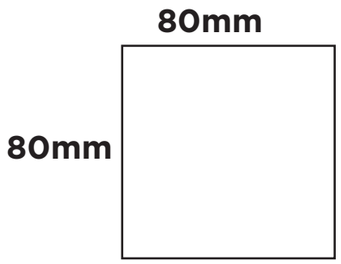
SETTING UP THIS PAGE USING YOUR EQUIPMENT

We will do this together in class using the instructions below:

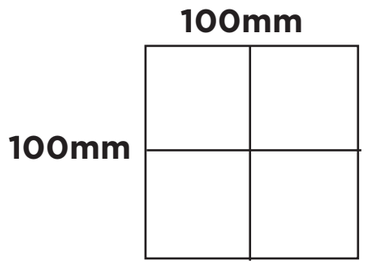
1. Using your T-square, rule a 5mm border around the edge of the page. You will need to mark and lightly draw the frame first around the page with your 2H, and then once you are happy it is correct, go over it with your HB.
2. Draw a Title Block. This is at the bottom of the page. It starts 10mm up from the bottom and 10mm in from either side. It is 14 mm high. 2H to mark and draw lightly, then HB once it is correct.
3. Split the title block in , and then into sections - watch the teacher for a trick using your 45 degree set square.

4. Complete the exercises when you have finished.

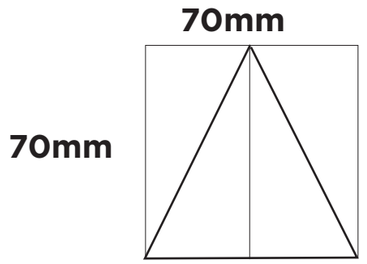
Exercise One:
Draw this square to scale, begin the bottom corner on the cross.



Exercise Two:
Draw this next square with the middle pattern to scale, begin the bottom corner on the cross.

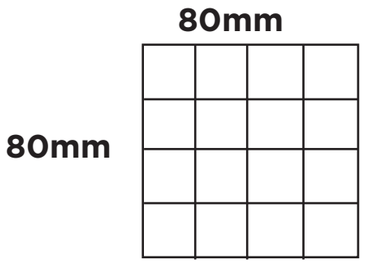


Exercise Three:
Draw this triangle using your 30/60 set square. Use the 30 degree side.



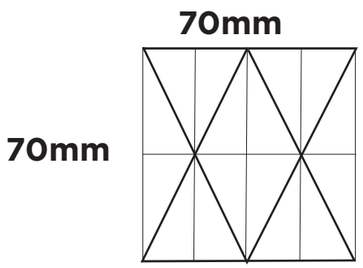
Exercise Four:

Draw this grid with the middle pattern to scale, begin the bottom corner on the cross.



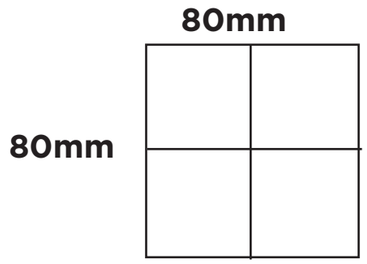
Exercise Five:

Draw this triangle pattern using your 30/60 set square. Use the 30 degree side.



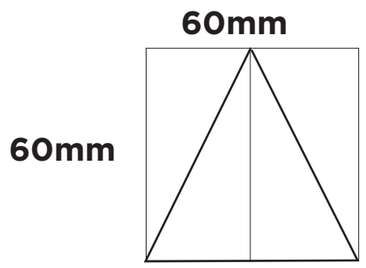
Exercise Six:

Draw this next square with the middle pattern to scale, begin the bottom corner on the cross.



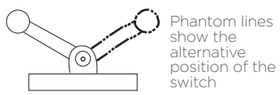
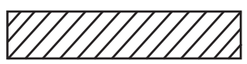
Exercise Seven:

Draw this triangle using your 30/60 set square. Use the 30 degree side.



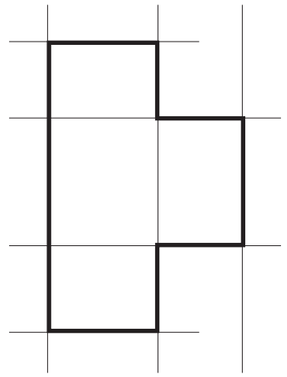
LINE TYPES

Using a pencil or pen is not just about drawing a basic line. There are many important uses and meanings for different line thicknesses. The diagram below shows different types of lines and their meaning when we are doing drawings.

LINE	NAME	DETAILS
thick	**Object Lines**	• Continuous long and dark • Used to outline the features that can be seen in the current view. • HB lead (Medium)
thin	**Construction Lines**	• Long thin lines used to show the construction of the drawing • VERY LIGHT • 2H lead (Light)
thin	**Hidden Lines**	• Dashed lines show details that **can not** be seen in the current view. • Each dash and space is even • HB lead (Light)
thin	**Center Lines**	• Center lines show the middle of a **symmetrical** shape. ie: circles. • Lines are evenly spaced and sized. • HB lead (Medium)
 Phantom lines show the alternative position of the switch	**Phantom Lines**	• Phantom lines show an different position of something. ie: a level that can move from left to right. • HB lead (Medium)
	**Section Lines**	• Usually drawn at 45 degree angle • Repetitive and evenly spaced • Indicates an area that has been cut through on a sectional view • HB lead (Medium)

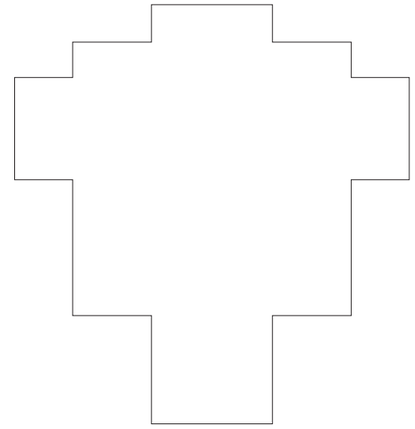
Adding line weights

Use your **2H** pencil to practice ading construction lines to these shapes where you think thinke they might go. Once you have done all of the construction lines, use your **HB** pencil to add thick object lines.

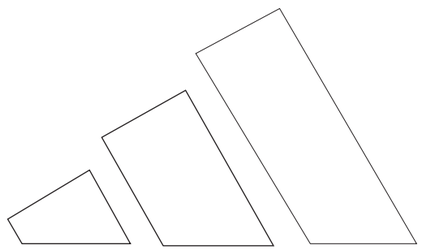


Example: Thin lines have been added to show how the shape was drawn. Thick dark lines to show the dark outline of the shape.

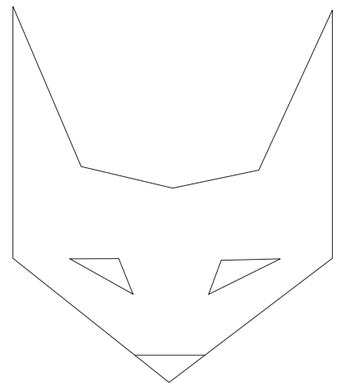
Exercise One:



Exercise Two:



Exercise Three:



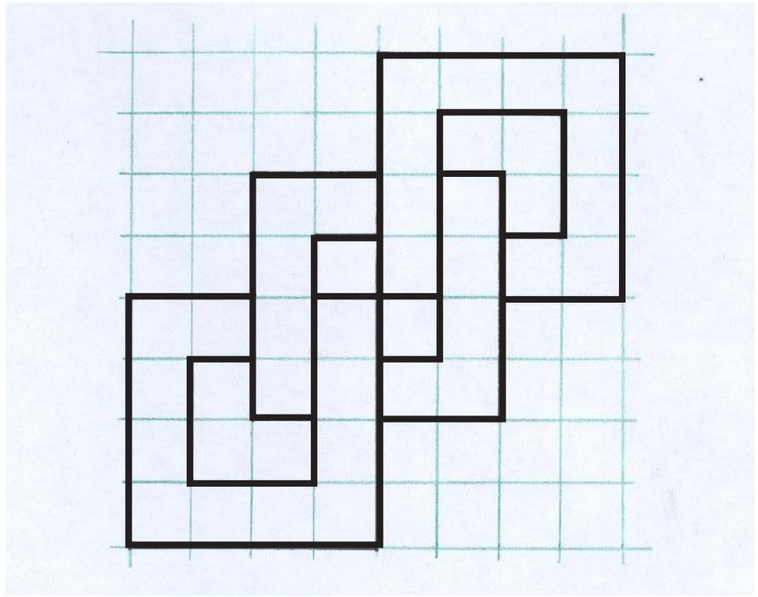
Logo Exercises:

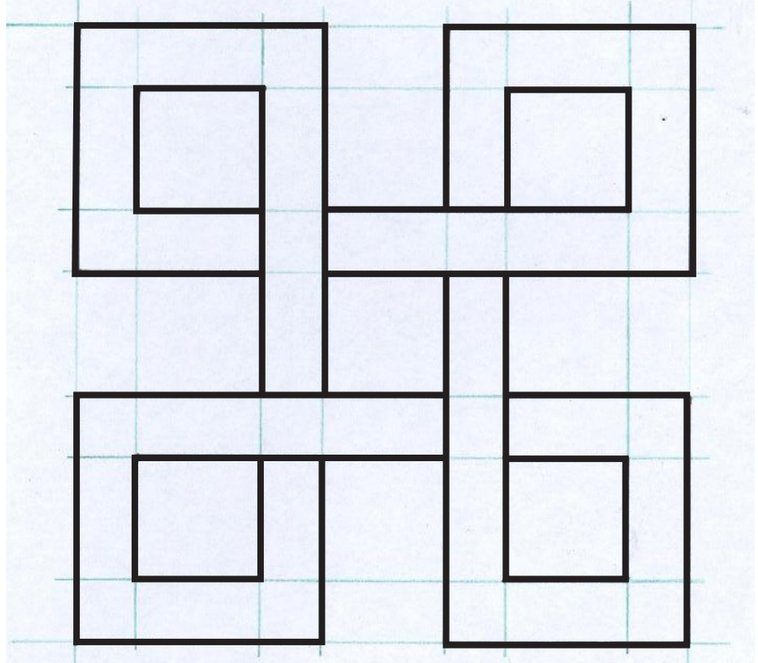
1. Set up a title block and frame

2. You will need to measure off of these images to know how big to draw your logos.

3. Use your 2H pencil to set up the grid construction lines before drawing the final lines on top to create the design.

HINT: *Start the bottom left corner on the cross.*





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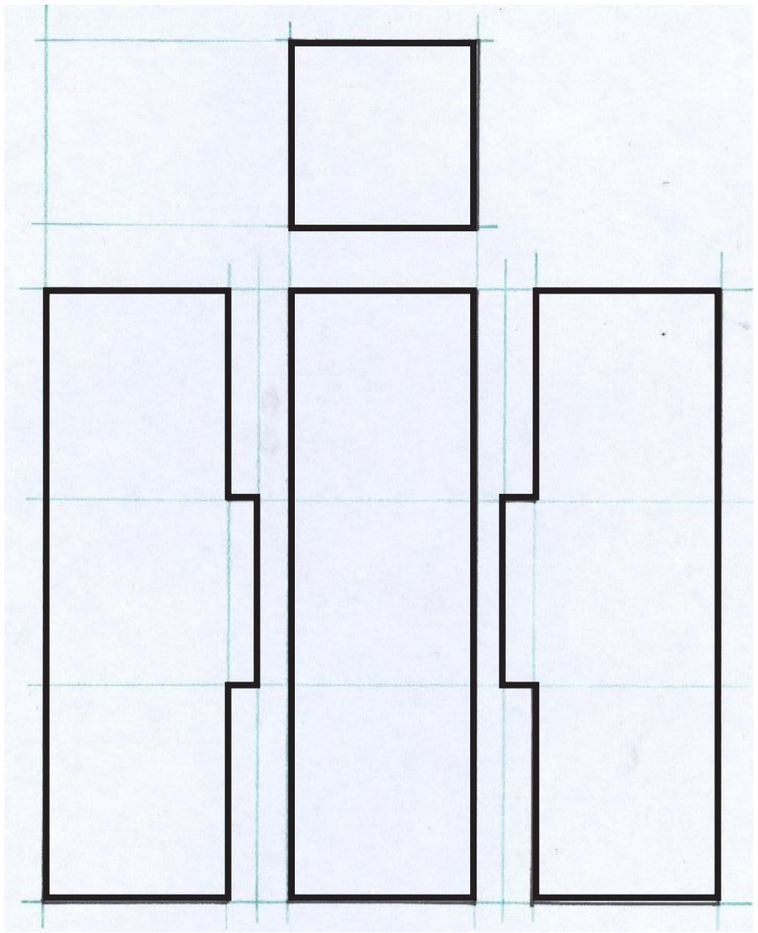


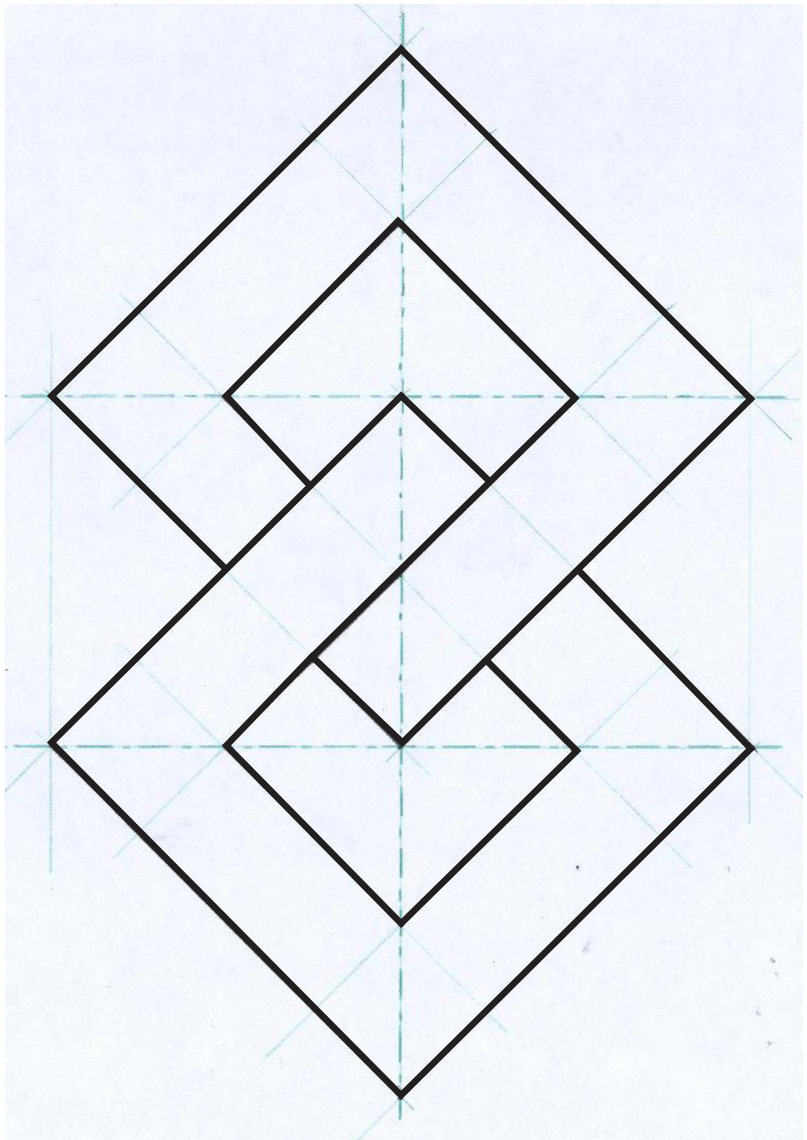
Logo Exercises:

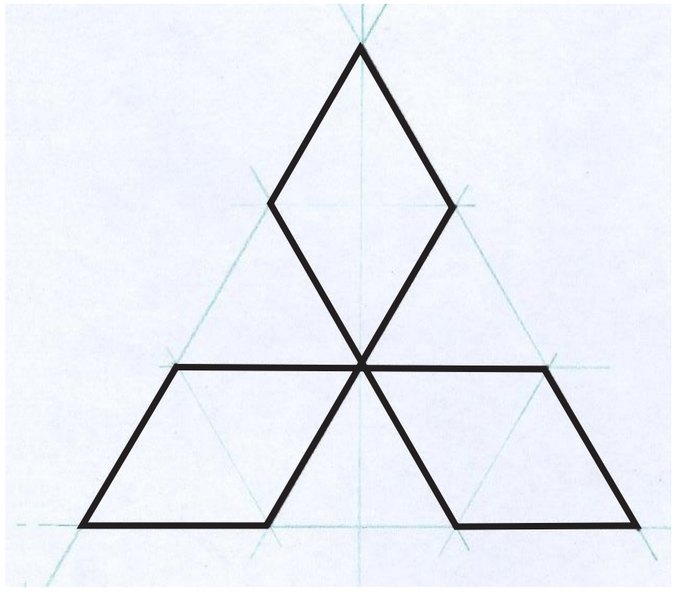
1. Set up a title block and frame

2. Can you find your own starting point? Have a think!

2. You will need to measure off of these images to know how big to draw your logos.

3. Use your 2H pencil to set up the grid construction lines before drawing the final lines on top to create the design.





Logo Exercises:

SCALING 2:1 (Double)

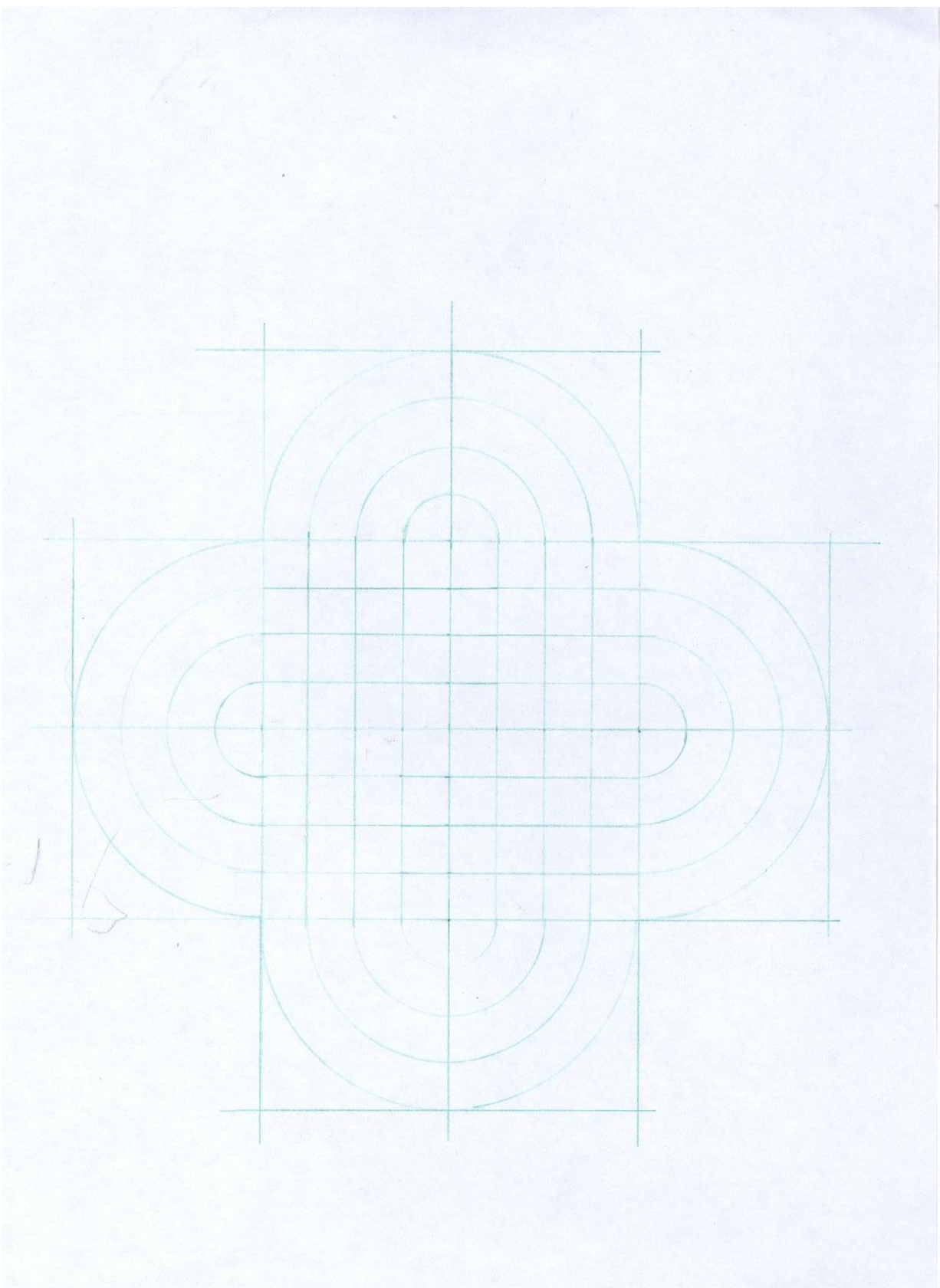
Sometimes it is impossible to draw an object in its exact size on paper. Think of a house floorplan - it would be a major job to draw it to scale!!

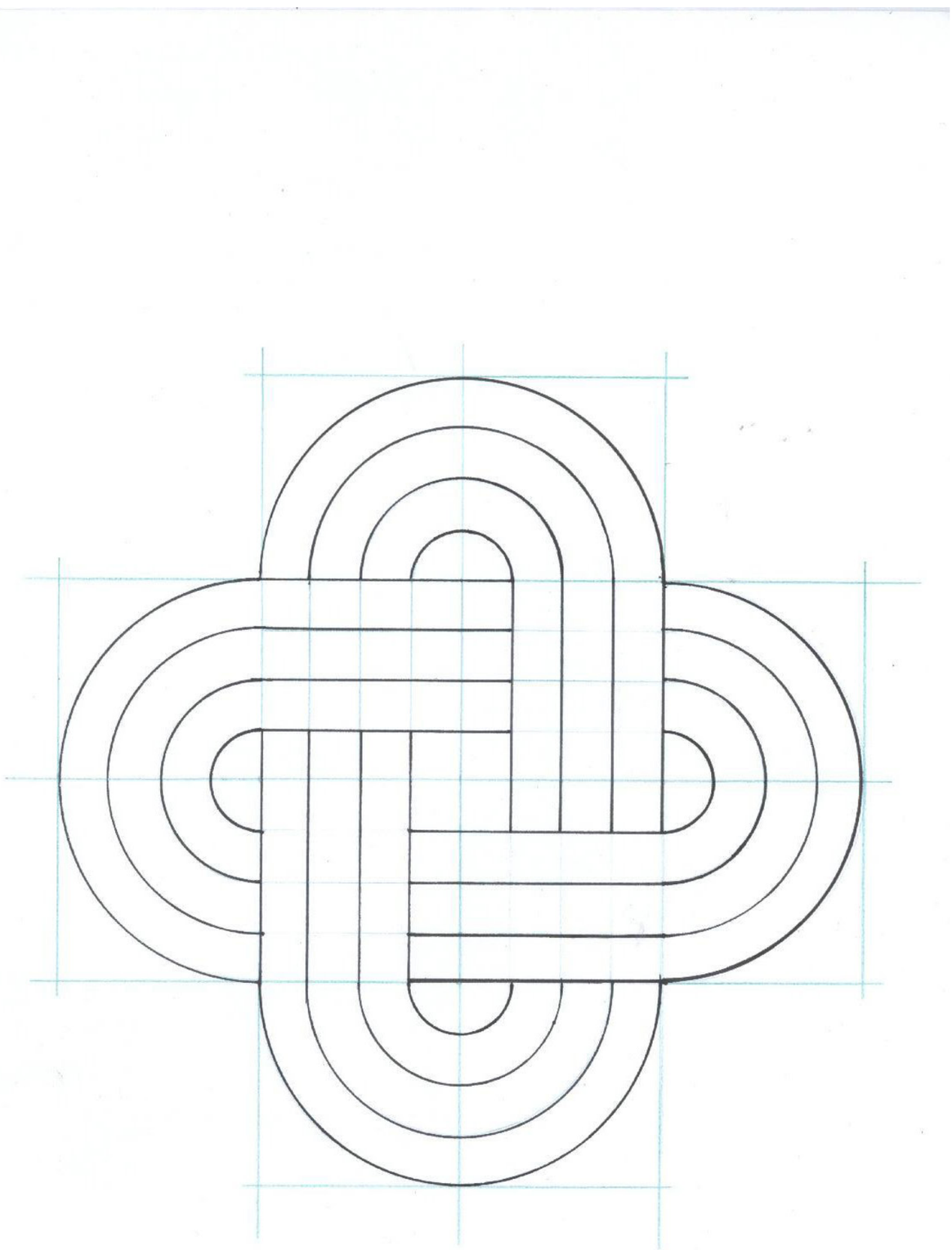
Scales are used to make an object smaller or larger depending on the need of the work.

The image of the object you are drawing is drawn to half of its normal size.

1. Set up a title block and frame

2. You need to **measure the lengths** *and* **double the measurement** *to make it twice the size of the drawing. Have a go on here with the Mitsubishi symbol.*

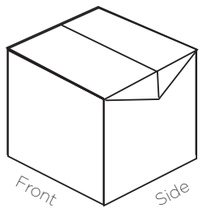
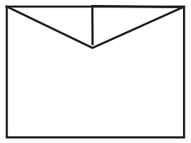
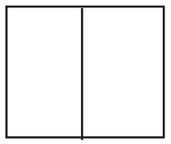
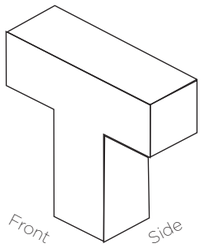
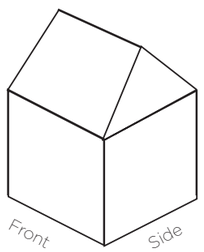
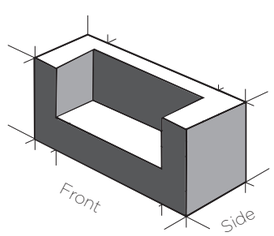




ORTHOGRAPHIC

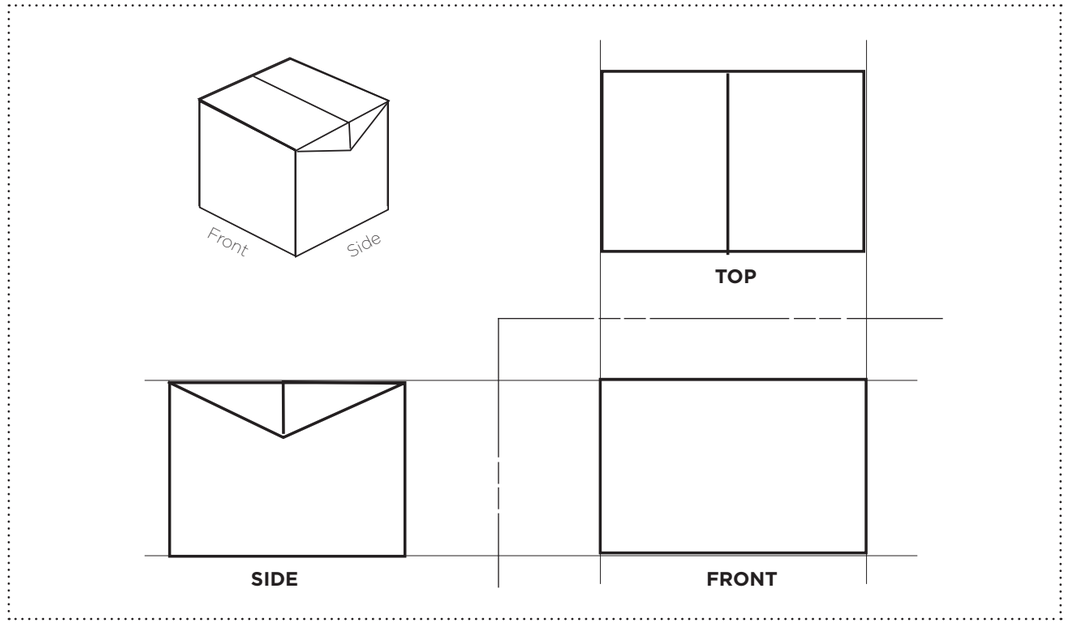
When designers create a design, they usually need to create 3D and 2D versions of it to help communicate details to other people. The best way to draw a 2D detailed image is in a style called Orthographic.

1. Below are objects in 3D.
2. You will need to sketch the different views of each object.
3. You are drawing the front (Main Elevation) and side (Side Elevation)

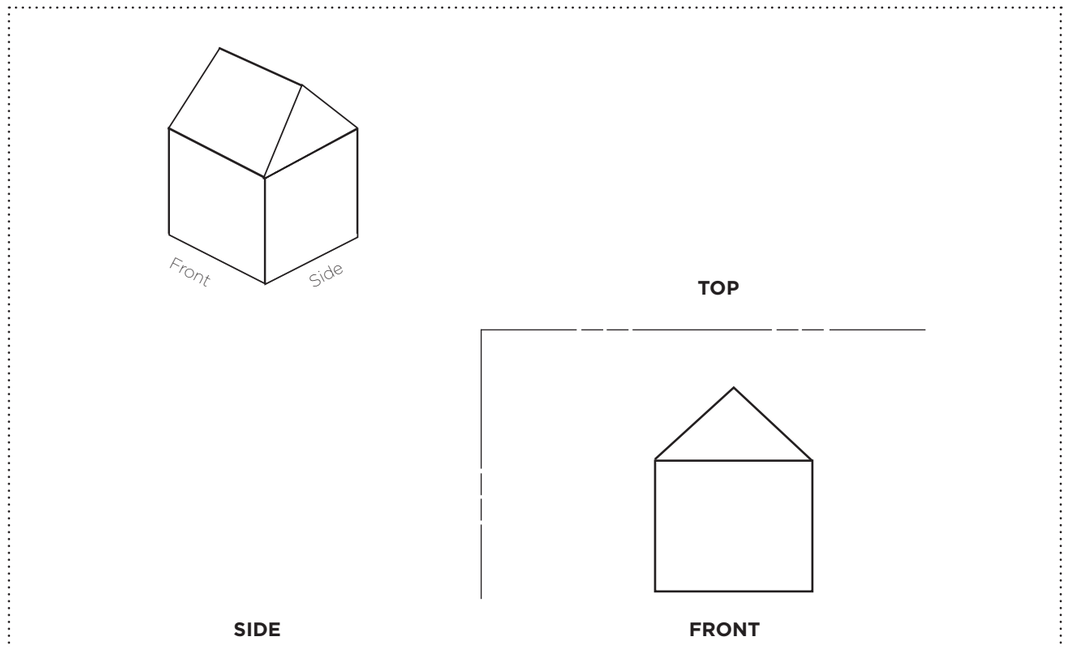
	FRONT	SIDE	TOP
			
			
			
			

ORTHOGRAPHIC LAYOUT

You should have an idea about how to draw different views in orthographic now. On this page is an example drawing jsing the special layout to make sure all views are the right size.



Exercise One: Complete this bottom diagram. You can sketch the views in the right places making sure the sizes match up properly. The front view has been drawn for you.

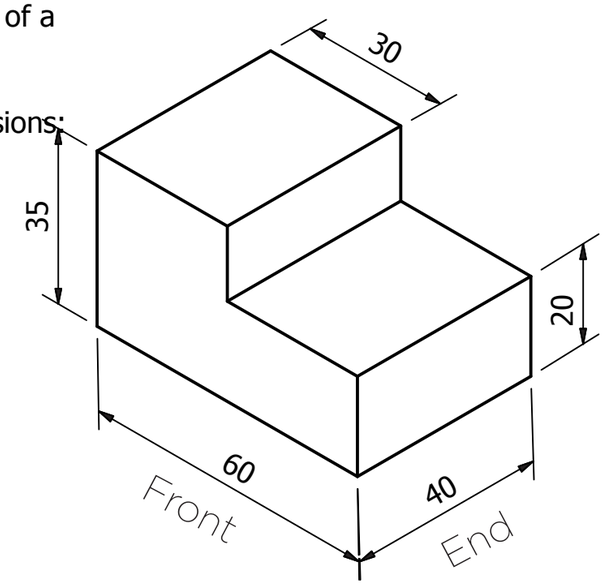


D2a

The Isometric View and an Elevation of a stepped block are given.

Draw full size using the given dimensions:

i. The Plan
ii. The End Elevation



	Good	N to I
Use of construction lines		
Use of outlines		
Correct dimensions		
Draughtmanship		

TOP

FRONT

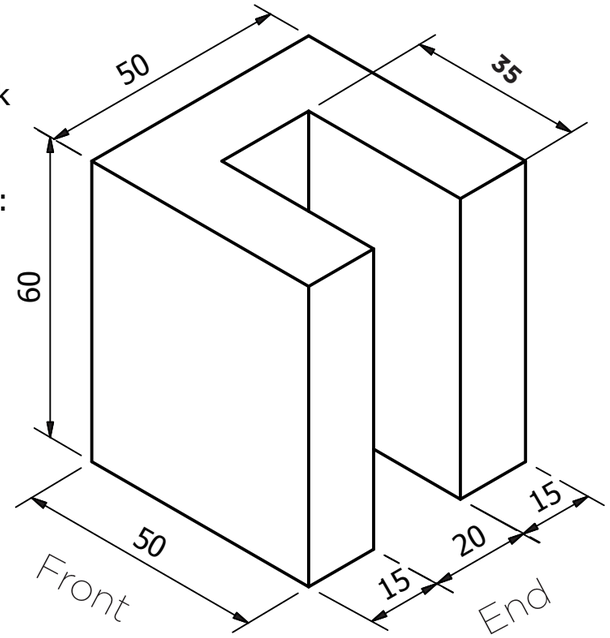
END

D2b

The Isometric View and an Plan of a block with a slot cut in it are given.

Draw full size using the given dimensions:

i. The Plan
ii. The End Elevation



TOP

FRONT

END

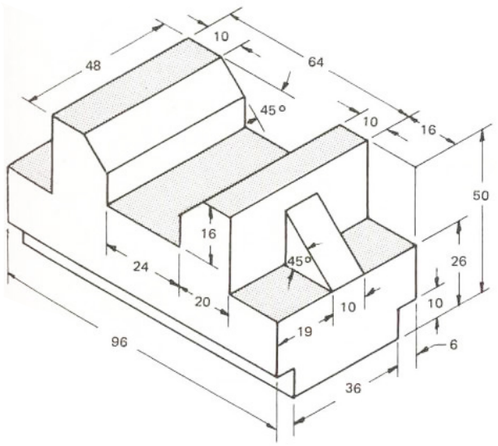
Ortho Extension Piece:

1. Set up a title block and frame in the blank space to the left

2. Use the measurments from the drawing.

3. Set up this page from scratch. Draw the front view first, then add in the 'change of plane' lines to seperate the views.

4. This piece is for Assessment, so work carefully! Remember the line weights!



Orthographic projection and construction		
Achievement (L3)	**Merit (L4)**	**Excellence (L5)**
- Produces plans and elevations.	Constructs accurate and neat line using drawing equipment. Uses projection for drawing layout of plans and elevations Can generate a third view from two given views. Under stands and uses a variety of line types; construction, outlines, and centre lines	Constructs accurate and neat line using all drawing equipment. Uses projection for drawing layout of plans and elevations. Can generate a third view from two given views. Under stands and uses the appropriate line types; construction, outlines, and centre lines, hatching, reference Labels views

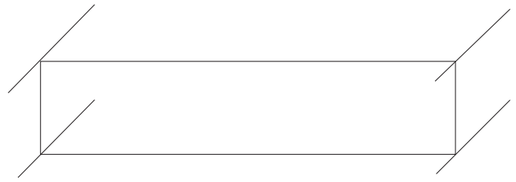
OBLIQUE SKETCHING

There are many types of 3D drawing styles that designers use. The first one we will practice is called Oblique.

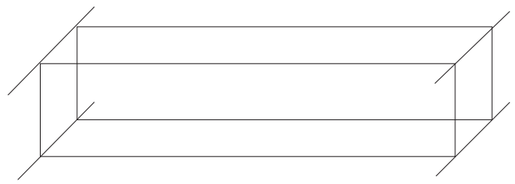
How to draw Oblique:

1. Draw the main face first - you can draw it like you would draw a front elevation.

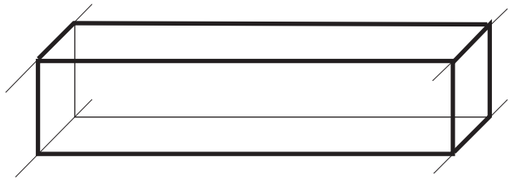
2. Then, you add 45 degree lines going back from all the points - these are all parallel to one another!



3. Connect up the extruded points to form the other faces. You will need to make sure all of the 45 degree lines are the same length otherwise the drawing will look strange.



4. Using your skills with thick and thin lines, add thick lines to the outside to highlight the faces that you can properly see.



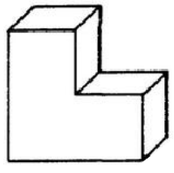
Oblique Exercises:

Use the Oblique grid to help with your sketching practice!

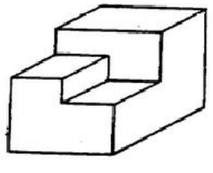
Complete each image on the Oblique grid. You will be awesome at Oblique by the end of this pactice!

1. Give this letter a depth of 2 squares.

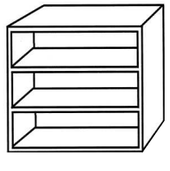
2. Give this a depth of 2 squares.



3. Split this shape into squares to make it easier.



4. You will need to use 'half squares' for the thin bits on this one!

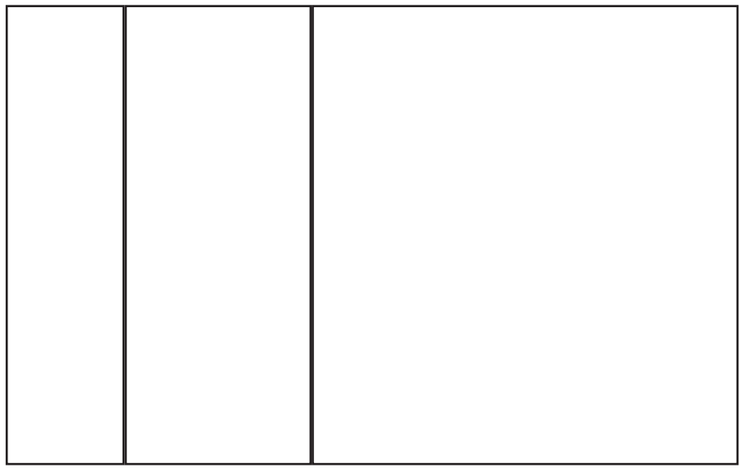


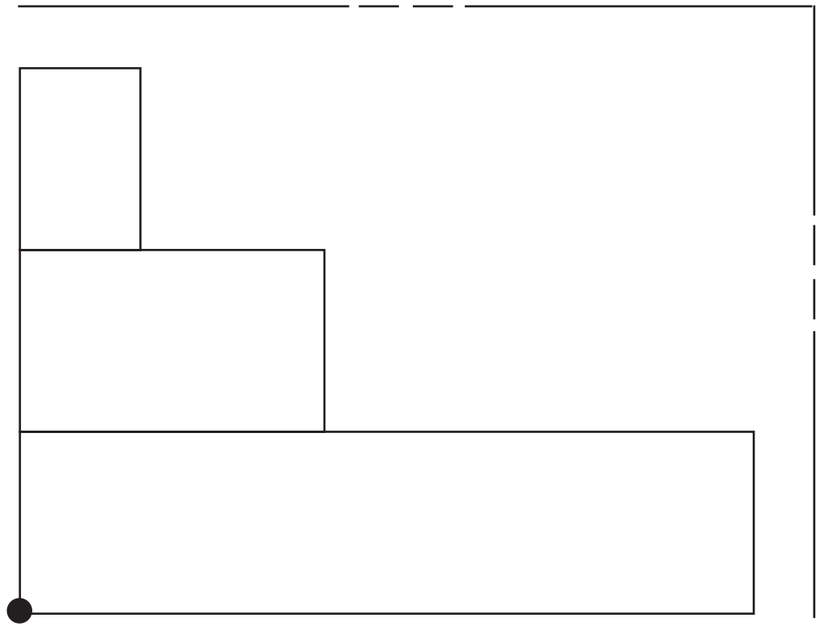
Oblique Instrumental:

Use your 45 degree set square to draw this images in Oblique.
Use the Front face as the flat face of your oblique.

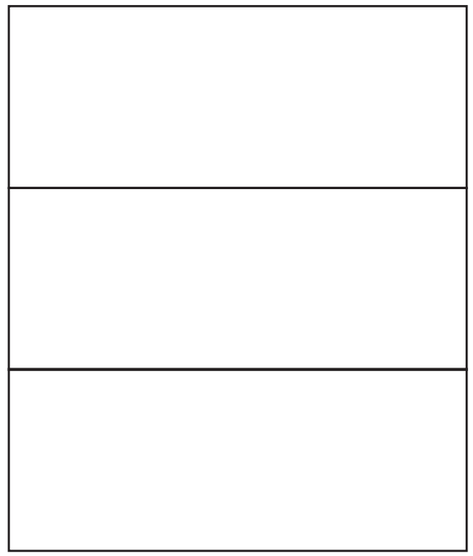
Start your drawing from the bottom left corner on the cross.
Measure off the ortho image and remember your line work!

TOP ELEVATION





FRONT ELEVATION (start)



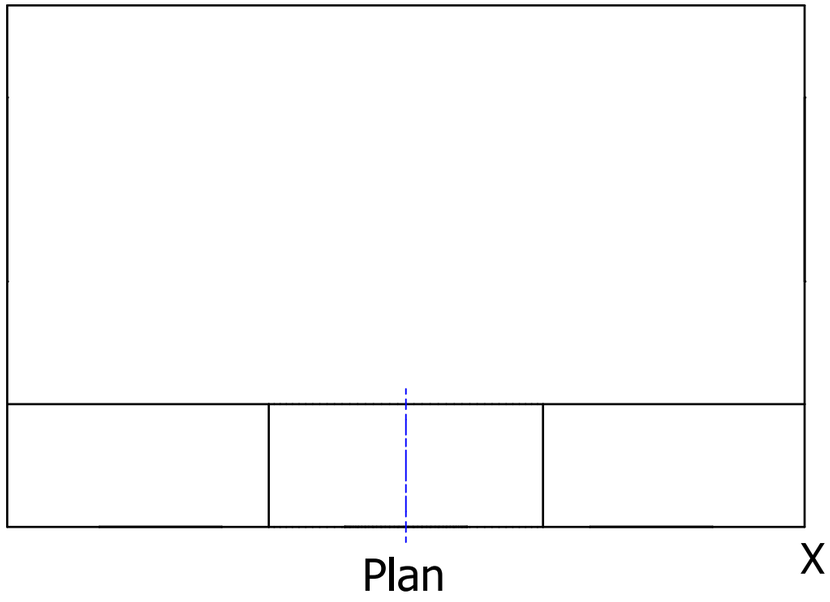
SIDE ELEVATION

B6

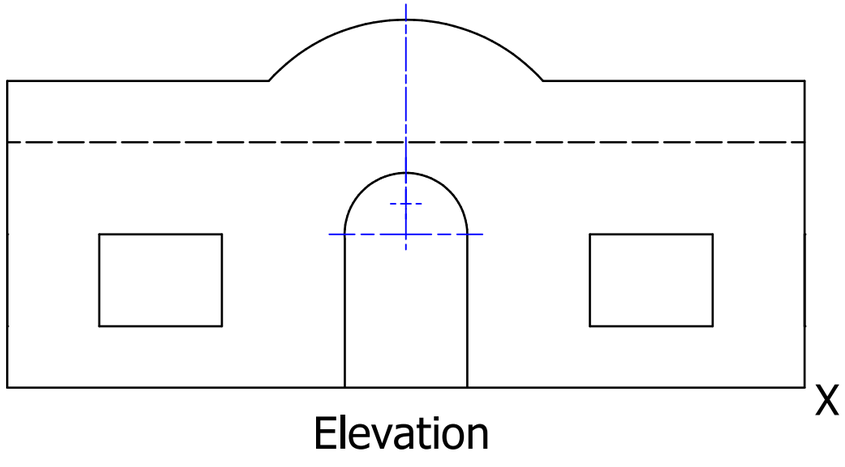
The Plan and Elevation of a toy building are given.

Draw the Oblique View of the building using point X as the starting position.

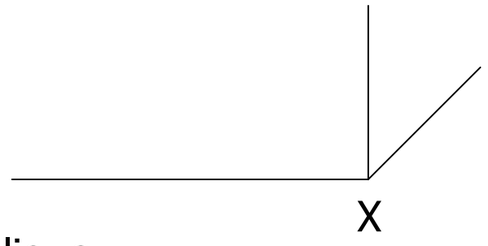
	Good	N to I
Use of construction lines		
Use of outlines		
Correct dimensions		
Draughtmanship		



Plan



Elevation



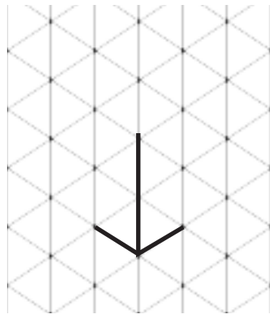
Oblique

ISOMETRIC

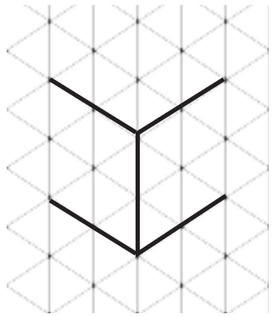
There are many types of 3D drawing styles that designers use. The second one we will practice is called Isometric.

How to draw Isometric:

1. Isometric is a drawing style that looks at an image from a corner - this means that you can see two faces of the design. The best way to start is to create an 'Arrow'.

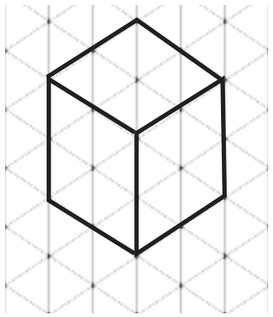


2. Extend the lines of the arrow to form sides. Add lines at the top to create the top face of the cube.



3. Connect the lines on the sides to create the side faces.

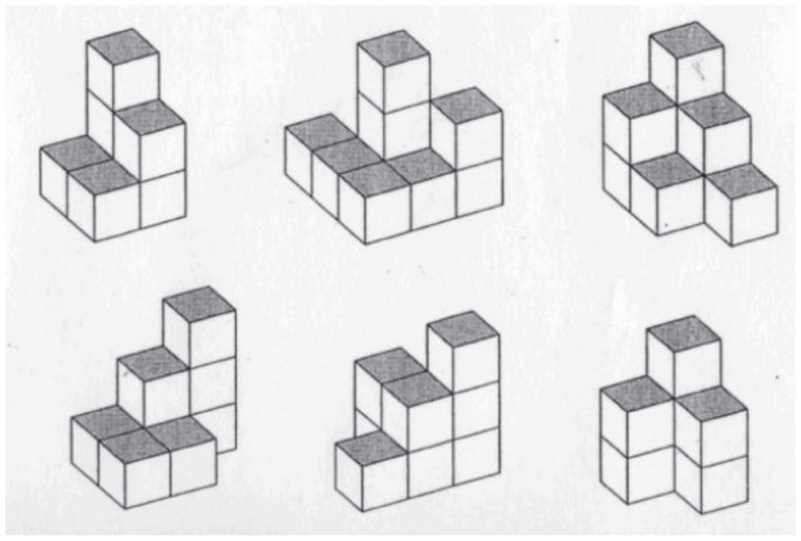
Draw this youself on the grid paper on this page.



Isometric Exercises:

1. Draw these designs in isometric on the grid.

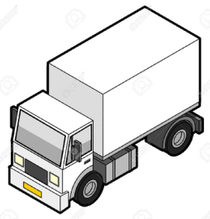
2. Pick a side of your drawings and shade it in to create definition like shown in the examples.

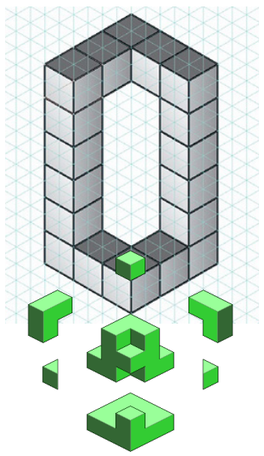


Isometric Exercise:

You have a whole page now.. What can you create? Have a look at these little images, you may even just draw a large snake! Get creative, have fun.

One square at a time.





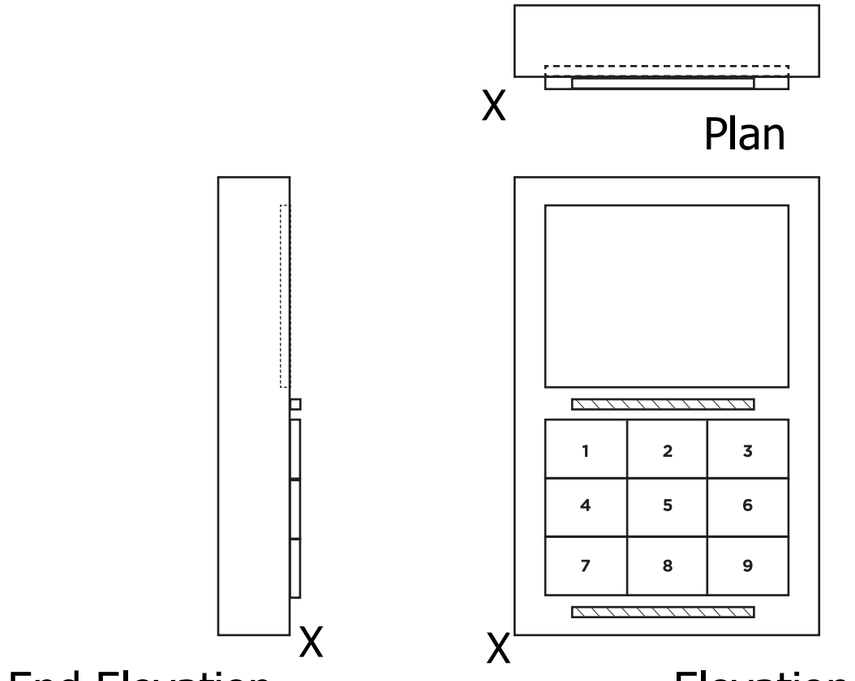
ISOMETRIC ASSESSMENT PIECE

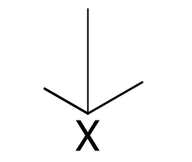
The Plan, Elevation and End Elevation of a old cellphone are given.

Draw full size using point X as the starting position.

i. The Isometric View

Use of construction lines		
Use of outlines		
Correct dimensions		
Draughtmanship		



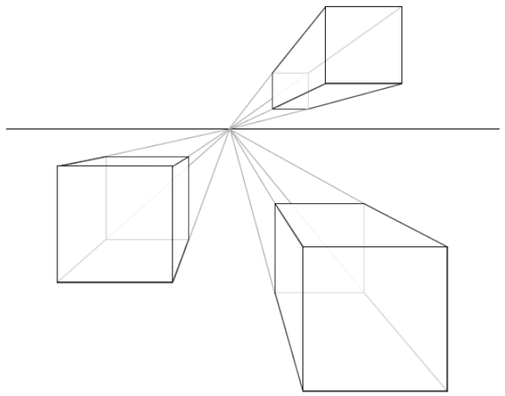


PERSPECTIVE SKETCHING

Perspective sketching is where objects get smaller as they get furthur away - just like in real life.

How to draw in perspective:

1 POINT PERSPECTIVE



1. Draw a horizontal line through the middle of your page.

2. Put a dot in the middle of the line - this is your vanishing point, the point where the objects point vanish towards.

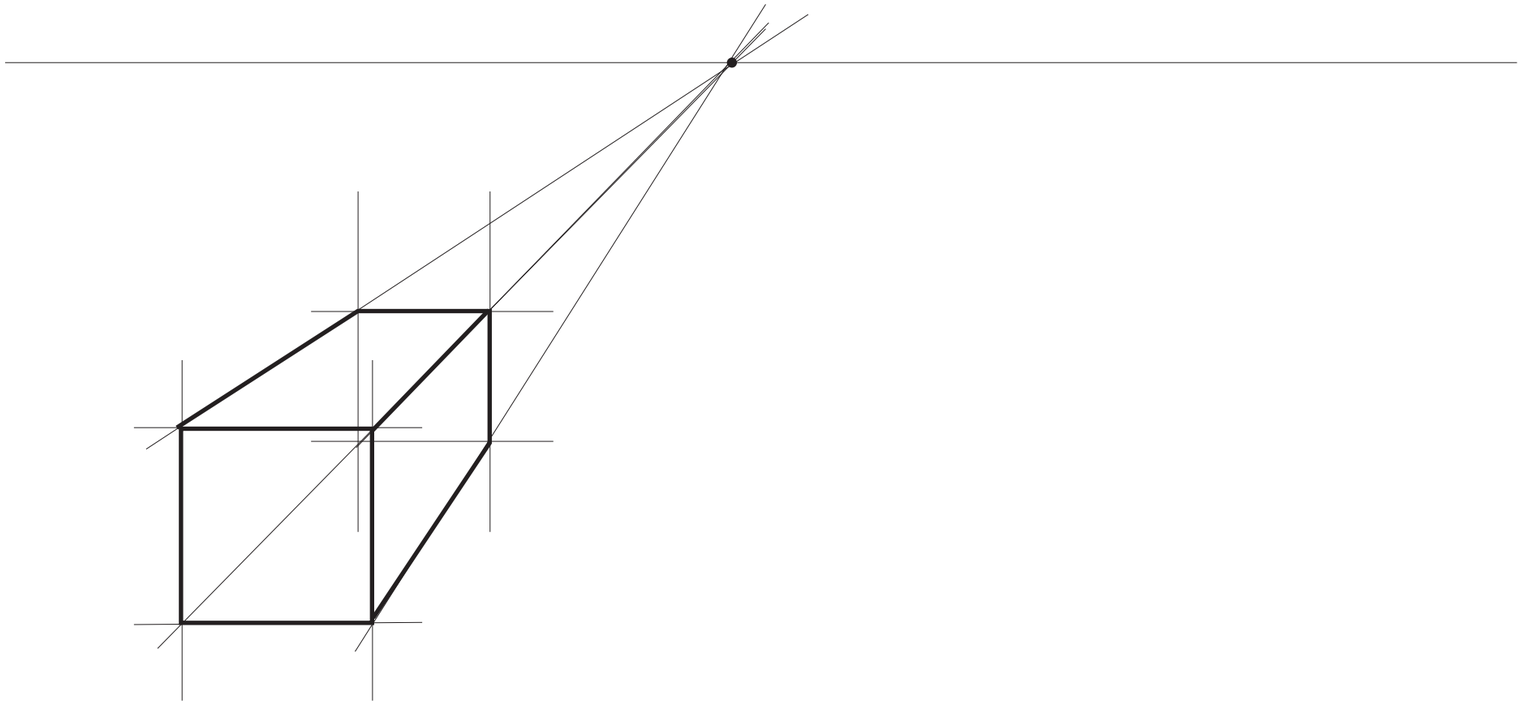
3. Draw some flat squares around the page.

4. From each point of the square, you will draw a line back toward the vanishing point. These are light, construction lines.

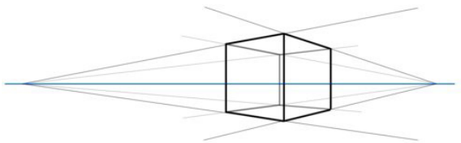
5. Pick somewhere on the line to draw the back of the box on. This becomes the depth.

6. Go over the final line with an HB pencil.

7. Start your 1 point box drawings in the spare space. The horizon line and Vanishing point have been done for you.



2 POINT PERSPECTIVE



1. Draw a horizontal line through the middle of your page.

2. Put a dot on each side of the line near the end. These are your vanishing points - this time you have two!

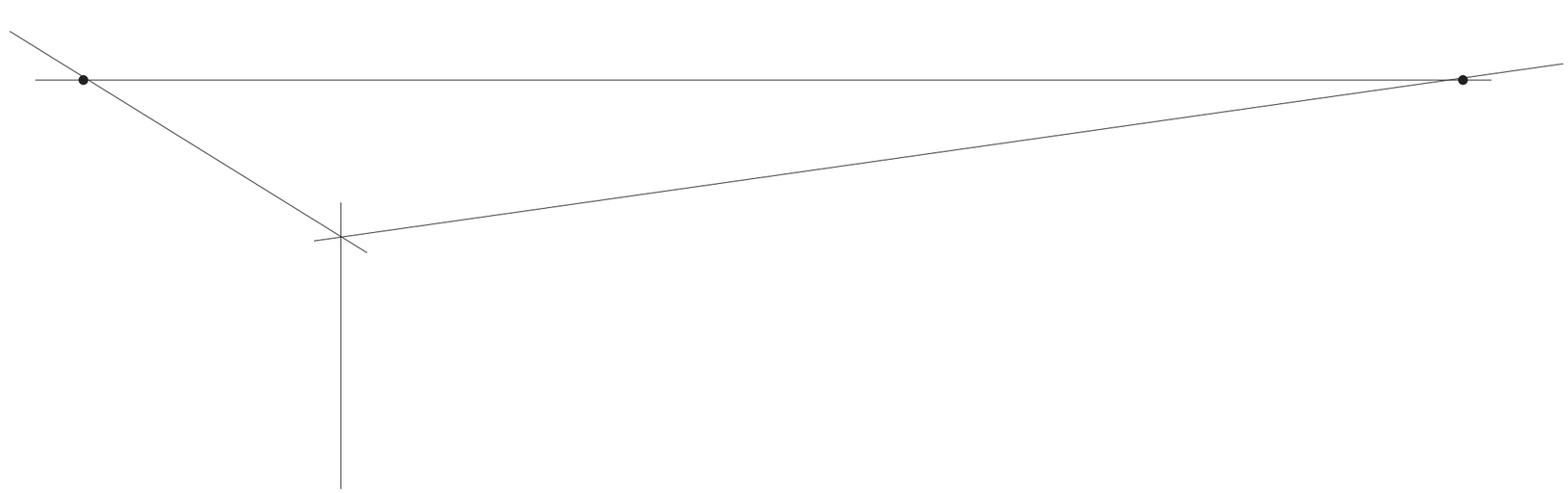
3. Draw some vertical lines on the page.

4. From the top and bottom of each line you have drawn, draw a construction line back to the vanishing point either side of the line.

5. Pick somewhere on each of the lines to draw the back of the box on. This becomes the depth.

6. Go over the final line with an HB pencil.

7. Start your 2 point box drawings in the spare space. The horizon line and Vanishing points have been done for you.

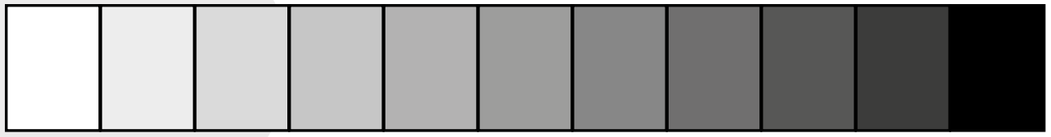


BASICS OF DESIGN VISUAL COMMUNICATION + RENDERING EXERCISES

Lines + Shading

Lines in graphics are more than just lines that show a drawing. Lines create shadows, show form and shape (both rounded and flat) and can help make a drawing look amazing on paper!

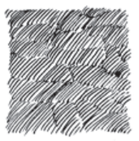
Activity:
Re-create the shaded boxes using different line techniques and tonal.

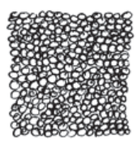


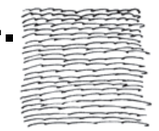
Tonal Box: The first square is 0% black and the last box is 100%

Recreate the tonal boxes here with your pencil and adjust the pressure to get the light and dark.

1. 

2. 

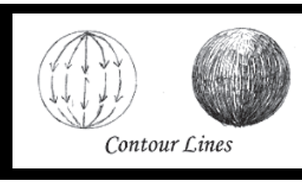
3. 

4. 

5. 

6. 

Activity:
Practice contour shading - this will show the curves on a shape. Draw your lines to follow the outer curve on the curves.

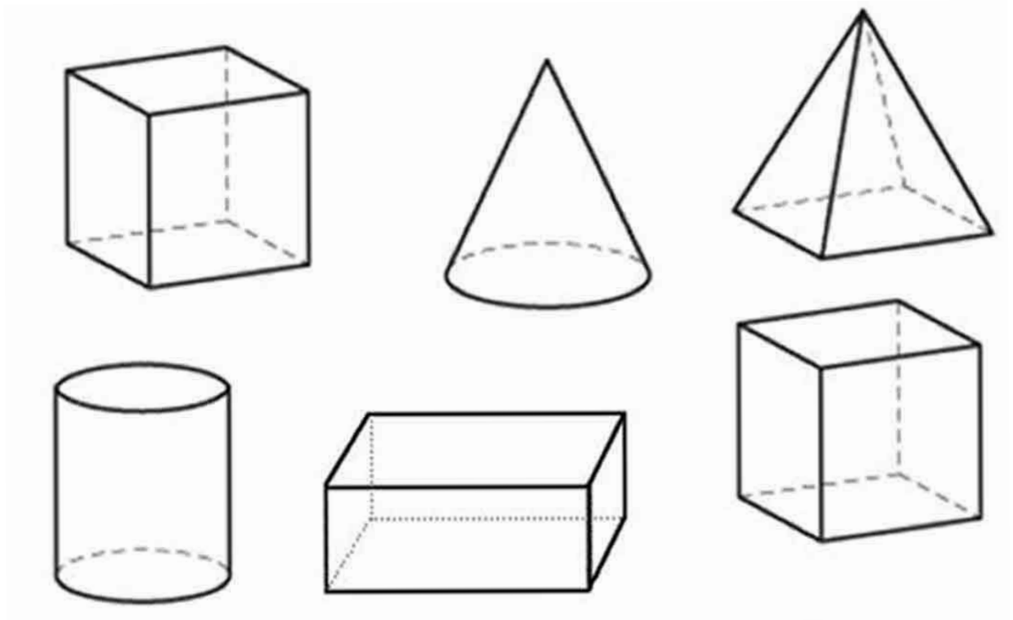


Scribbling

Dappling

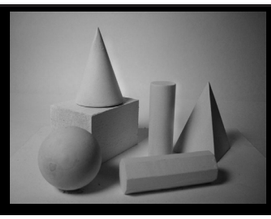
Lines

Activity:
Apply your favourite shading technique to the below shapes to show shadows.



Activity:
Using basic shapes, create a composition of three shapes and use your shading to create form, tone, shadow, highlights and distinction.

Show off your skills! Get creative and use multiple types of line work to show the form.



RENDERING TEXTURES

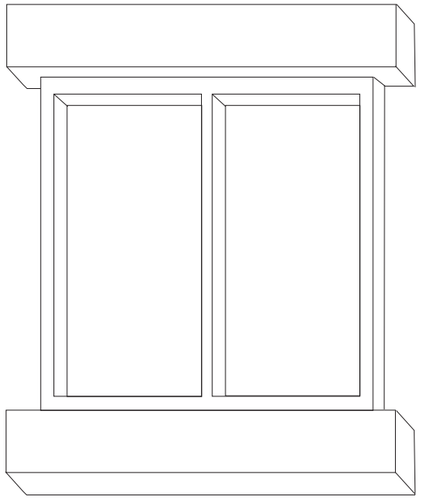
Using many differnt types of colouring and drawing instruments, we can render objects to look like their real life material.

Activity: *Here are some examples of texturing. Follow the instructions to create your own practice texture in the blank boxes - you can do it differently next time if you are not happy with the result this time!*

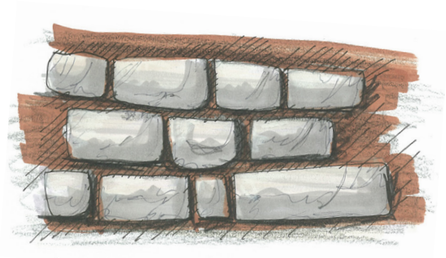
EXAMPLE

MY TRY

EXAMPLE



MY TRY



EXAMPLE

MY TRY

WOOD

1. Using markers, choose a brown and a yellow brown and quickly colour in the space with streaks. Start with the light, then apply the dark.

2. Add curvy lines with either a black or brown ink pen. Try to move
organically to imitate the lines of wood grains. Add a few knots!

3. Using black and white pencils, draw lines either side of the ink lines. These will become highlights and shadows.

WINDOW FRAME + GLASS

1. First colour in the frame with a light marker. Messy! Quickly! Using the same marker, choose a corner and add another layer of felt to it so that there is shadow.

2. Using the thin end of the marker, shade in the thickness of the frame.

3. Using a black ink pen, outline the entire drawing.
Add shadows into the drawing by creating dots - this is called stippling. Add stippling in the areas that you gave shadow to with the marker.

4. Use lines to darken the thickness of the window sill.

5. For the Glass: Using a pencil, pick a corner of the glass pane and darken it at a 45 degree angle.

You will need to create alternate shades of diagonal black lines at
alternate stroke weights. Refer to the example for guidelines.

ROCK WALL

1. With a light pencil, draw some rough outlines of rocks in a line. Using markers, choose a range of greys and colour diagonally across the rocks.

2. Choose a corner of the rocks to darken, and add layers with the grey graphic pen.

3. Choose a colour to use for the grout (gap between the rocks) and roughly render that area.

4. Using your black gel pen, you will outline all of your drawing, and all cross hatching to the grout, while adding squiggly, light detail to the darker parts of the rock.

RENDERING TEXTURES - ASSESSMENT

Photo copy 4 versions of your cellphone isometric and paste them here. You will get 4 chances to practice your rendering before selecting a final style to use for assessment.

GLUE AN ISO PHONE HERE

PEN

GLUE AN ISO PHONE HERE

PENCIL

GLUE AN ISO PHONE HERE

CHALK PASTEL