Design & **Visual** Communication

Year 10
DVC Exercise Booklet

Name: _____

Waiopehu College
2016

PROGRAMME 2016

Term 1

WEEK	CONTENT	ACTIVITY	SKILLS	ASSESSMENT	DATES
1	Intro				1 Feb – 5 Feb
2	Revision - Ortho	Exercise Booklet	4, 7		8 Feb – 12 Feb
3	Revision – Iso and Oblique	Exercise Booklet	3, 7		15 Feb – 19 Feb
4	Isometric Circles	Exercise Booklet			22 Feb – 26 Feb
5	Isometric Circles - Speaker	Speaker Concepts			29 Feb – 4 Mar
6	Revision – 2 point		1, 3, 7		7 Mar – 11 Mar
7	1 Point Persp	Exercise Booklet	1, 3		14 Mar – 18 Mar
8	1 Point Persp	Exercise Booklet			21 Mar – 25 Mar
9	1 Point Persp	Exercise Booklet			28 Mar – 1 Apr
10	1 Point Persp	Exercise Booklet		Visual	4 Apr – 8 Apr
11	Drawing styles comparisons	Exercise Booklet	1, 3, 4, 7	Communication	11 Apr – 15 Apr

TERM ONE HOLIDAYS (18 April – 29 April)

Term 2

WEEK	CONTENT	ACTIVITY	SKILLS	ASSESSMENT	DATES
1	Project Brief One	Concepts	1, 7		2 May – 6 May
2	Elements of Design	Concepts			9 May – 13 May
3		Final			16 May – 20 May
4	Sketching Revision	Exercise Booklet	1		23 May – 27 May
5	Project Brief Two	Research	1, 2, 5, 7	Knowledge	30 May – 3 Jun
6	Designers	Research		Of Design	6 Jun – 10 Jun
7		Research			13 Jun – 17 Jun
8	Presentation	Research			20 Jun – 24 Jun
9		Presentation			27 Jun – 1 Jul
10		Presentation			4 Jul – 8 Jul

TERM TWO HOLIDAYS (11 July – 22 July)

Term 3

WEEK	CONTENT	ACTIVITY	SKILLS	ASSESSMENT	DATES
1	Rendering Textures	Exercise Booklet	1, 2		25 Jul – 29 Jul
2	Rendering Textures	Exercise Booklet			1 Aug – 5 Aug
3	Project Brief Three	Research/concepts	1,3,4,5,6,7	Graphics	8 Aug – 12 Aug
4	Generating ideas	Research/concepts		Practice	15 Aug – 19 Aug
5	(Bach)	Chosen Concept			22 Aug – 26 Aug
6		Chosen Concept Render			29 Aug – 2 Sep
7		Development			5 Sep – 9 Sep
8		Development			12 Sep – 16 Sep
9		Dev. Sketchup			19 Sep – 23 Sep

TERM THREE HOLIDAYS (26 September – 22 July)

Term 4

WEEK	CONTENT	SKILLS	SKILLS	ASSESSMENT	DATES
1	Project Brief Three cont.	Dev. Sketchup			10 Oct – 14 Oct
2		Final Sketchup			17 Oct – 21 Oct
3		Final Pres + Eval			24 Oct – 28 Oct
4	Mini Brief: Four	Guided: Concepts	1, 2, 5, 7	Visual	31 Oct – 4 Nov
5	Cellphone	Guided: Chosen		Communication	7 Nov – 11 Nov
6		Final Isometric			14 Nov – 18 Nov
7		Instrumental			21 Nov – 25 Nov
8	Instumental Revision	Exercise Booklet	1, 3, 4		28 Nov – 2 Dec
9	Intrumental Revision	Exercise Booklet			5 Dec – 9 Dec
10	Activities Week				12 Dec – 16 Dec

XMAS HOLIDAYS

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 5 - the level of Year 10 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**

ASSESSMENT of THIS BOOKLET

Assessment Schedule

WAIOPEHU COLLEGE
Visual Communication

10DVC 2016
Exercise Book

Sketching		
Achievement (L4)	**Merit (L5)**	**Excellence (L6)**
Produce sketches using clean lines. • Sketches use parallel line. • Objects are in good proportion. • Guided by light crating boxes	Produce high level sketches using clean lines and proportions. • Sketches use accurate parallel line. • Objects are in good proportion. • Sketches have increased detail + form.	Produce high level proportionate sketches using clean lines, shading to show form • Sketches use accurate parallel lines • Objects are in good proportion. • Sketches have high-level detail + form. • Pen and Pencil work is controlled to create solid smooth lines and shading

Pictorial drawings and construction		
Achievement (L4)	**Merit (L5)**	**Excellence (L6)**
☐ Understands and uses a variety of accurate pictorial drawing using the correct angles and proportions. ☐ Constructs drawing using construction and outline using drawing equipment. ☐ Limited design details are communicated in the drawing	☐ Understands and uses a variety of accurate pictorial drawing using the correct angles and proportions. ☐ Can manage complex angles and curves and circles. ☐ Constructs drawing using construction and outline, final outline and hidden lines ☐ Accurate and neat line work ☐ Design detail is communicated in the drawing	☐ Understands and uses a variety of accurate pictorial drawing using the correct angles and proportions. ☐ Can manage complex angles and curves and circles. ☐ Constructs drawing using careful and consistent construction and outline, final outline and hidden lines ☐ Accurate and neat line work ☐ All details of the design are communicated in the drawing clearly

Presentation		
Achievement (L4)	**Merit (L5)**	**Excellence (L6)**
☐ 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. ☐ Presentation of bookwork is attempted, fulfilling the brief and shows limited coherency	☐ 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. ☐ Presentation of bookwork is completed, fulfilling the brief and shows decent coherency and creativity	☐ Uses colour staying accurately and sparingly within the lines drawn ☐ Uses tonal change both black and white and colour blending to show the form of the object, identifying light sources with highlights ☐ Texture techniques shows clearly the material to enhance the detail ☐ Combines the above to add realism to simple objects and shapes with skill and care ☐ Presentation of bookwork is completed to a high level, fulfilling the brief and demonstrating a coherent and creative idea process

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 and add material and constructional notes.

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.*			

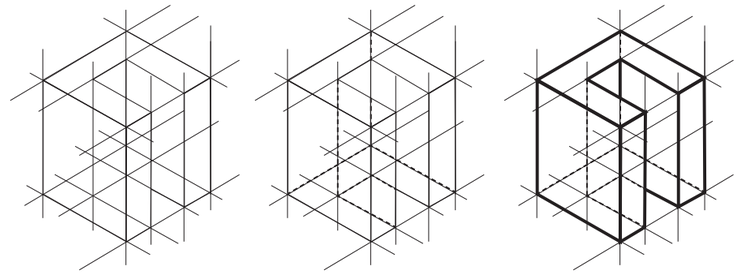
REVISION OF DESIGN VISUAL COMMUNICATION + INSTRUMENTAL DRAWING EXERCISES

LINE TYPE REVISION

Line Exercises:

1. Use your knowledge of :
- construction lines
- object lines
- center lines
- hidden lines

to add in detail to the following basic shapes.

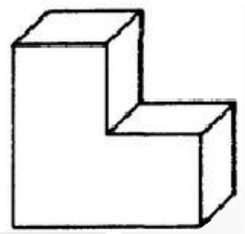


Step One: *Add Construction lines (Light, 2H)*

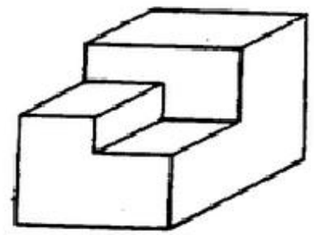
Step Two: *Add Hidden lines (Light, 2H, Dotted)*

Step Three: *Add Object lines (Light, HB, Solid)*

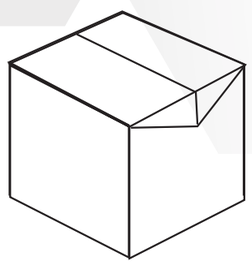
Exercise One:



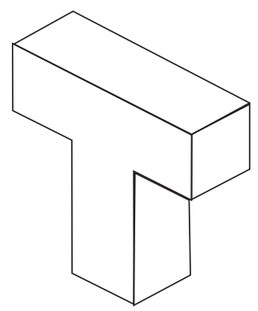
Exercise Two:



Exercise Threeee:



Exercise Four:



SET UP THIS PAGE USING YOUR EQUIPMENT

Set up the:

- 5mm border

- Title block

If you need a reminder of the steps, read 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.

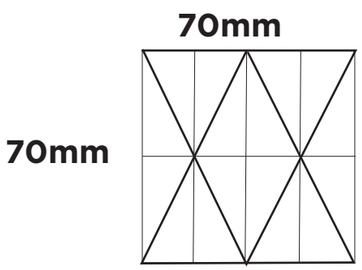
2. Draw a Title Block. This is at the bottom of the page. It starts 10mm up from the bottom and 10mm in from either side. It is 14 mm high. 2H to mark and draw lightly, then HB once it is correct.

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.

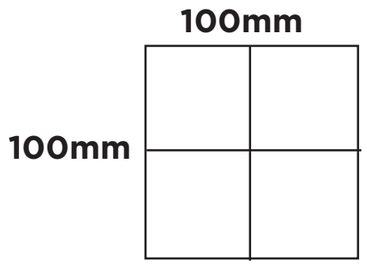
Exercise One:

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



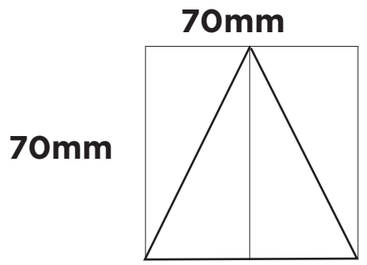
Exercise Two:

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.

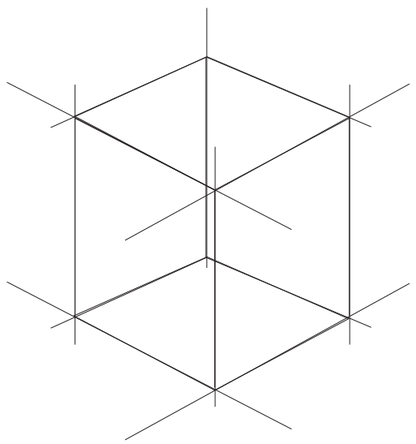


Crating

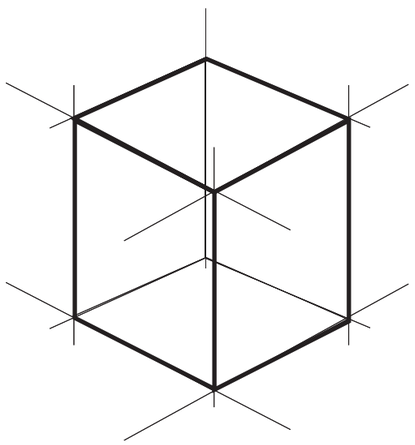
Crating is one of the most important skills to have in DVC. Without crating, it is very difficult to get sketches in proportion with straight lines.

How to set up a Crate:

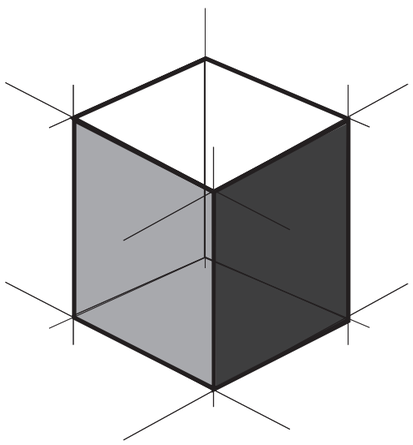
1: Using a 2H pencil, softly create the outline of the box - it needs to show the bottom face and the sides of the crate. Use long sweeping lines!



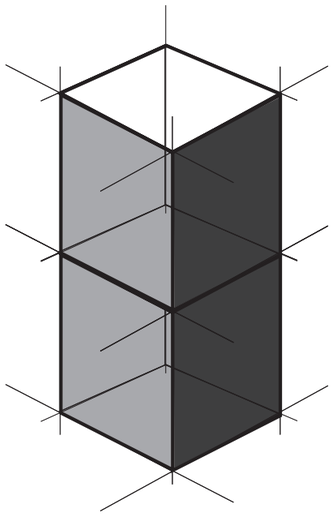
2: Using an HB pencil, draw in the outlines of the shape that you can see. **DO NOT** erase the crating lines.



3: Now, find your light source and select a side that is to be the lightest. The side furtherest from the light side will be the darkest and the remainding side will be a medium weight.



4: For each new cube, repeat the steps. Is there a way you can do this faster with one crate? Have a think...

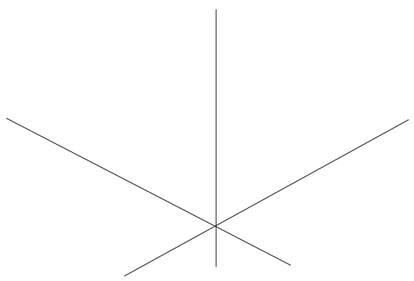


EXERCISE:

Have a go at setting these crates up and completing the drawings.
Don't forget to choose a light source for the shading:

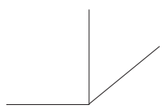
ISOMETRIC

starters provided



OBLIQUE

starters provided



ISOMETRIC

You start this one

OBLIQUE

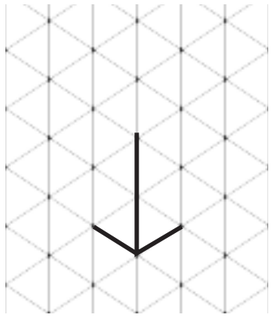
You start this one

ISOMETRIC

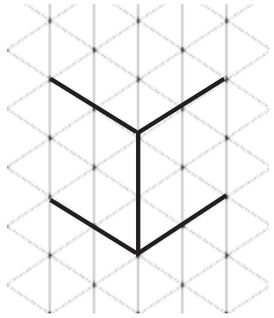
There are many types of 3D drawing styles that designers use. The second one we will practice is called Isometric.

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'.

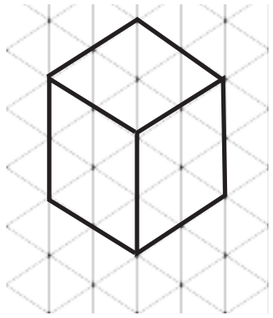


2. Extend the lines of the arrow to form sides. Add lines at the top to create the top face of the cube.



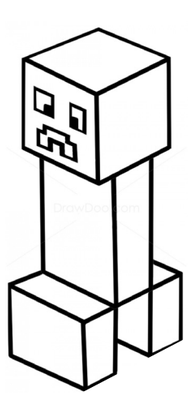
3. Connect the lines on the sides to create the side faces.

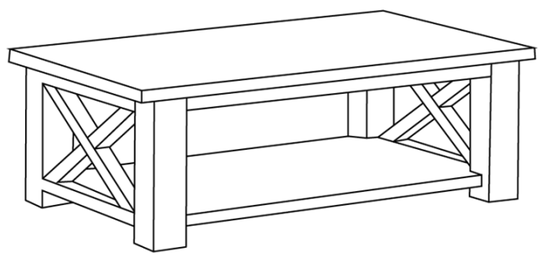
Draw this youself on the grid paper on this page.

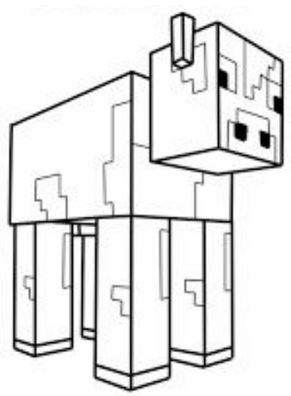


Exercises:

Sketch the below images in the space to the right. Remember to start with an arrow shape to get going!







Use this space to practice your freehand Isometric using the images from the other side as starters - use colour to render shadow and highlights if you get time:

Drawing Style Revision

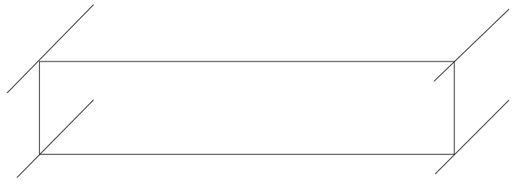
OBLIQUE

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

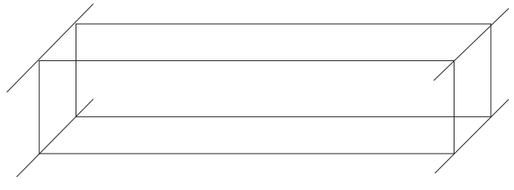
How to draw Oblique:

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

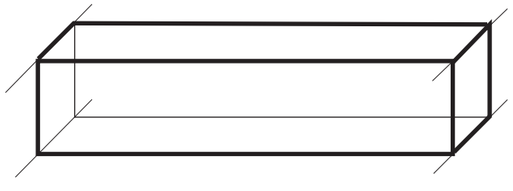
2. Then, you add 45 degree lines going back from all the points - these are all parallel to one another!



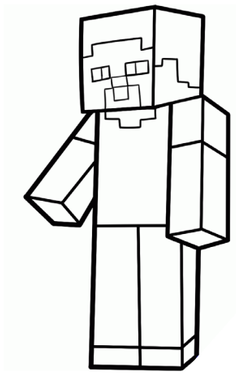
3. Connect up the extruded points to form the other faces. You will need to make sure all of the 45 degree lines are the same length otherwise the drawing will look strange.

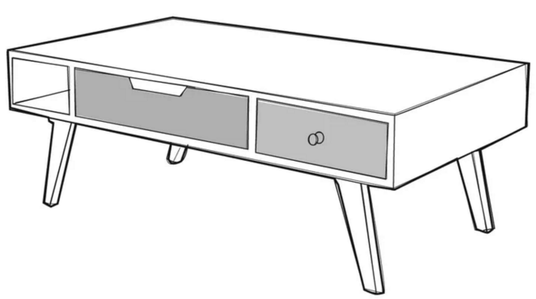


4. Using your skills with thick and thin lines, add thick lines to the outside to highlight the faces that you can properly see.



Use this space to practice your freehand Oblique using the images from the left side as starters:



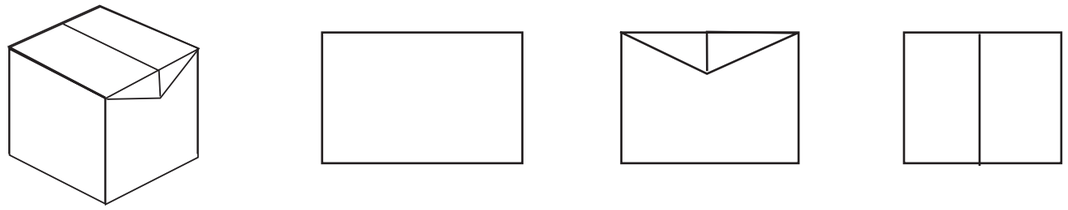


ORTHOGRAPHIC

The main drawing style used for 2D is called Orthographic.

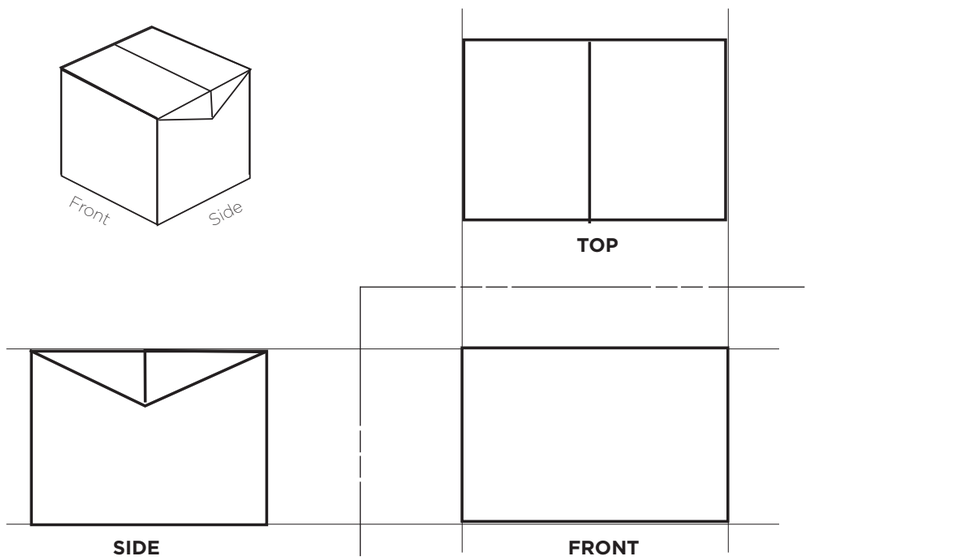
1.The first step is to figure out what all of the sides of our object look like and draw them out on a scrap piece of paper.

FRONT **SIDE** **TOP**



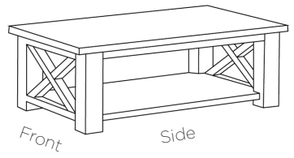
2. The second step is to put lay out all of the views in the formal way.

When we do this, we start with the front view and use this for reference for sizing for the other views. We also label each view and put the correct information into the title block.



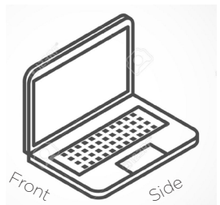
10-12-13	**SCALE: 1:2**	**ORTHOGRAPHIC DRAWING OF BOX**	**ASHLEE ROUSE**

Use this space to practice sketching the different views of the provided images:



TOP

SIDE **FRONT**

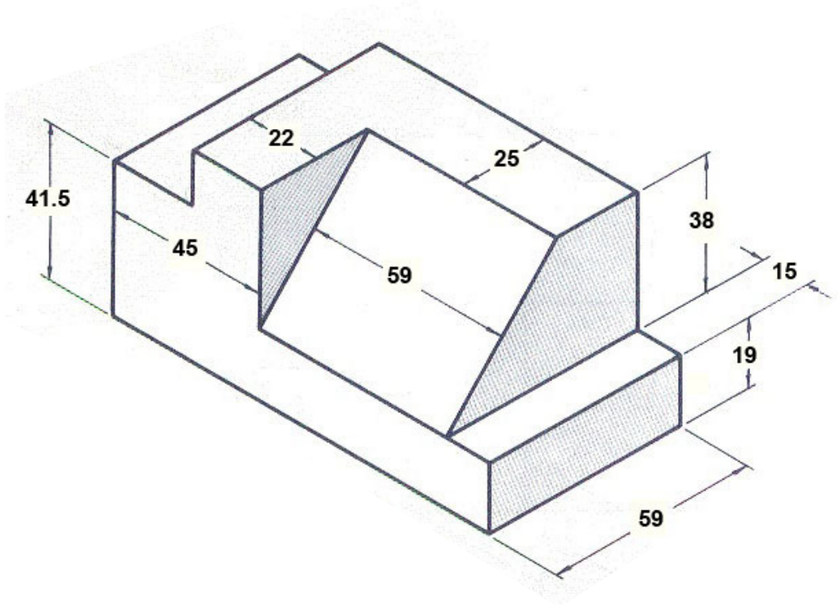


TOP

SIDE **FRONT**

Orthographic Exercise:

- Set up a title block and frame
- Measure out the side that you choose to be the front, and begin the front view
- Project the lenghts and draw the other sides



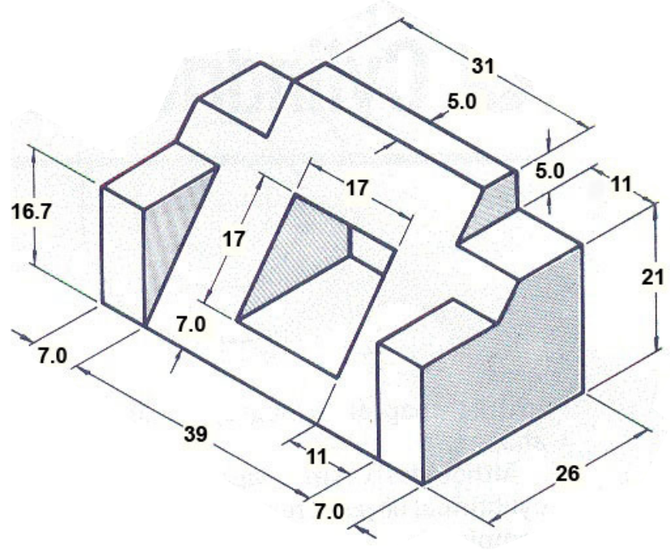
TOP

FRONT

END

Orthographic Exercise:

- Set up a title block and frame
- Measure out the side that you choose to be the front, and begin the front view
- Project the lenghts and draw the other sides



TOP

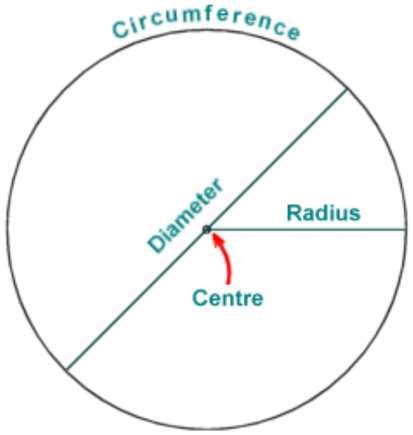
FRONT

END

USING A COMPASS

It is important we learn how to use a compass for Technical drawing so we can create curves and understand technical drawing diagrams.

To do this, we need to learn the parts of a circle and how they are represented in a drawing.



A circle has four basic parts:

Radius: The distance from the edge of the circle to the center.

Diameter: The distance from one side straight to the other side (2x the radius distance)

Center: Middle of the circle, where the circle is drawn from when using a compass.

Circumference: The entrie length of the outside line of the circle.

When we read a Technical Diagram:

Radius is written as an **R**

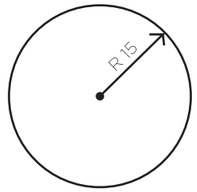
Diameter is shown as this symbol ∅

Center is shown as a **center** **cross hair**

Exercise:

Using your fresh circle knowledge, identify the information off each circle and fill in the gaps.

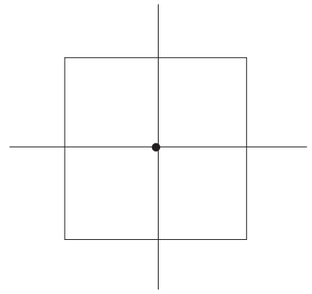
Once you have done that, use your compass to practice drawing a circle in the box. You are trying for a smooth solid single line.

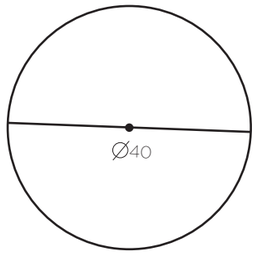


EXERCISE ONE:

RADIUS: _____

DIAMETER: _____

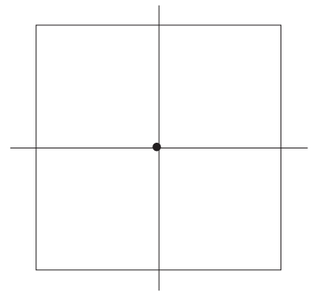


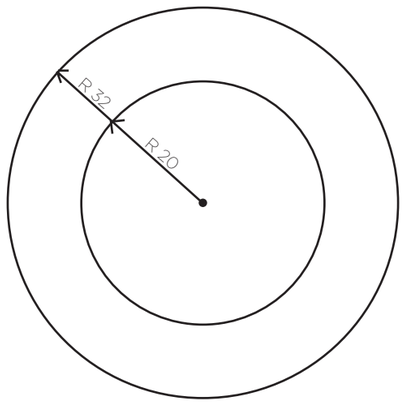


EXERCISE TWO:

RADIUS: _____

DIAMETER: _____





EXERCISE THREE:

Smaller circle:

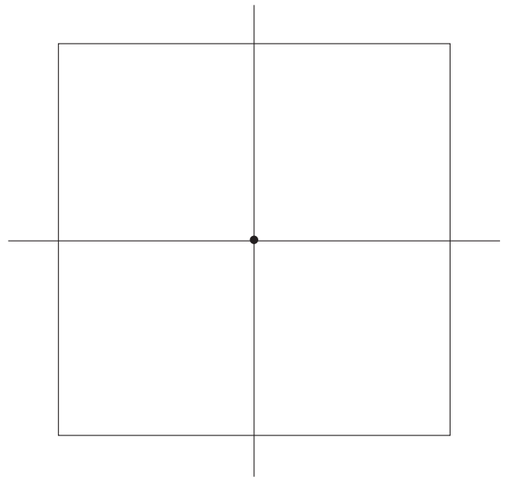
RADIUS: _____

DIAMETER: _____

Larger circle:

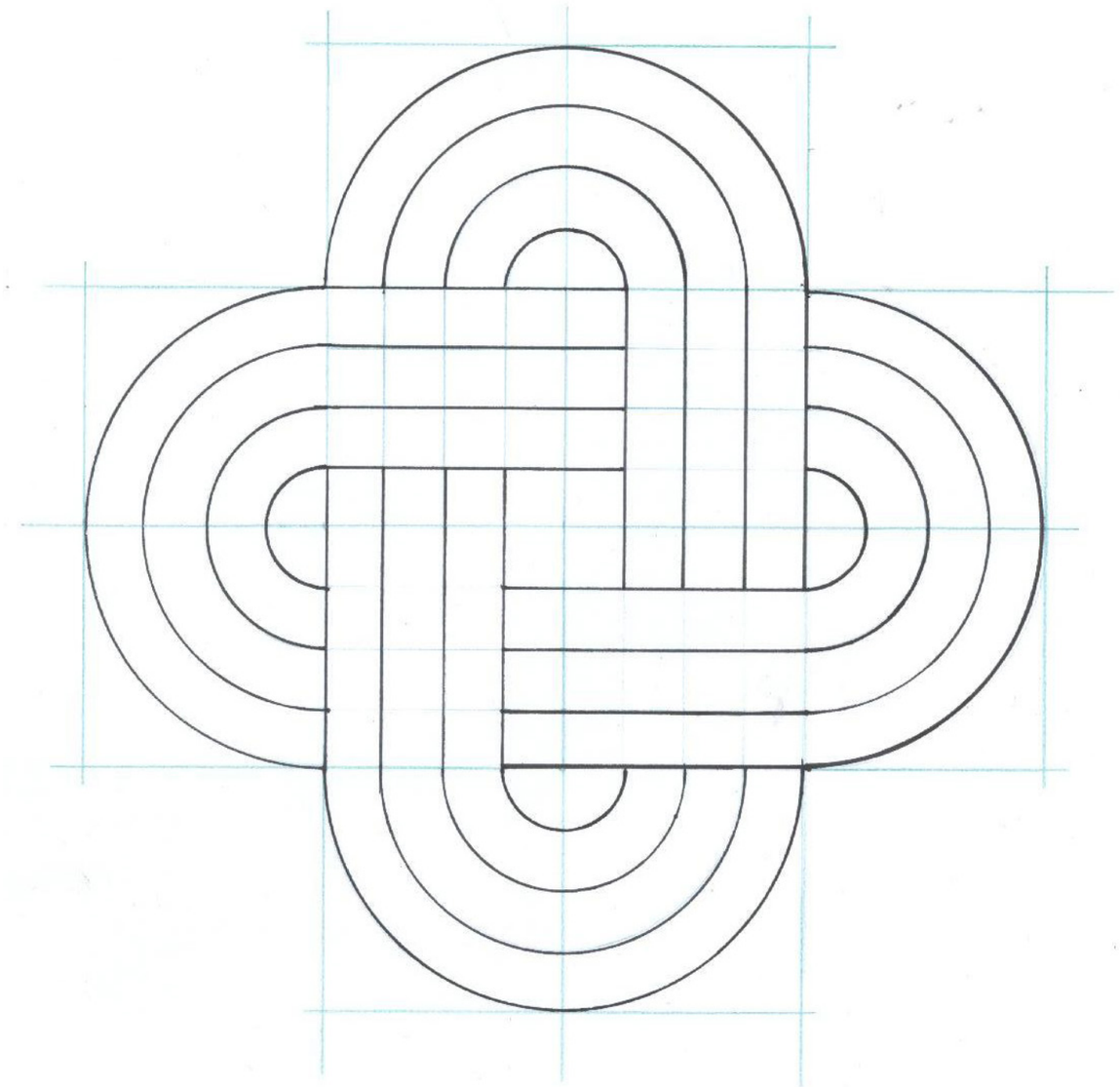
RADIUS: _____

DIAMETER: _____



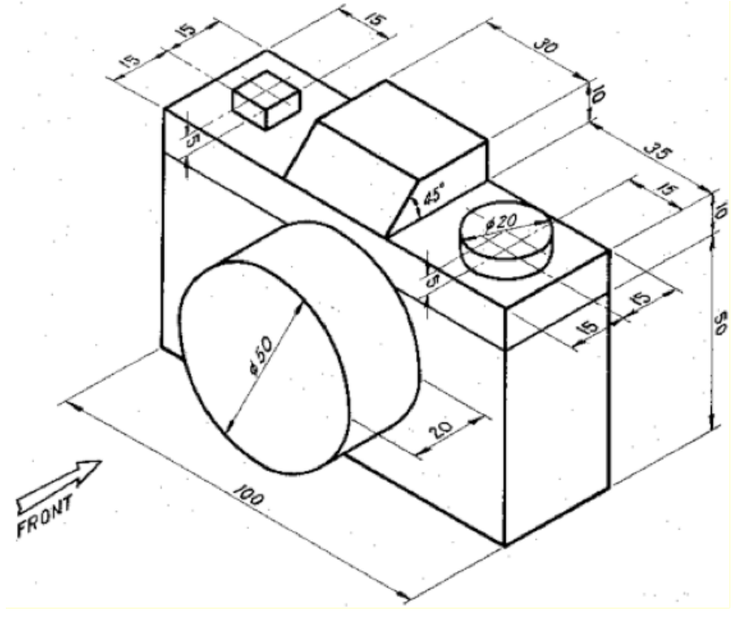
HINT: Have you noticed that the circles can be split into quarters easily? Remeber this for later on.. It will come in hand when creating Isometric circles.

COMPASS DESIGN EXERCISE



Orthographic Exercise:

- Set up a title block and frame
- Measure out the side that you choose to be the front, and begin the front view
- Project the lenghts and draw the other sides



TOP

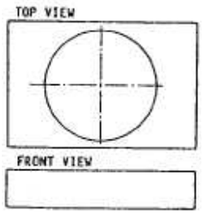
FRONT

END

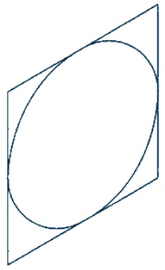
Isometric Circles

When we are drawing in isometric, everything is on an angle. This is important to remember when drawing a circle in Isometric as the circle in on an angle too. But how can we draw a cicle on an angle accurately?

Here is an example of a regular Oblique circle

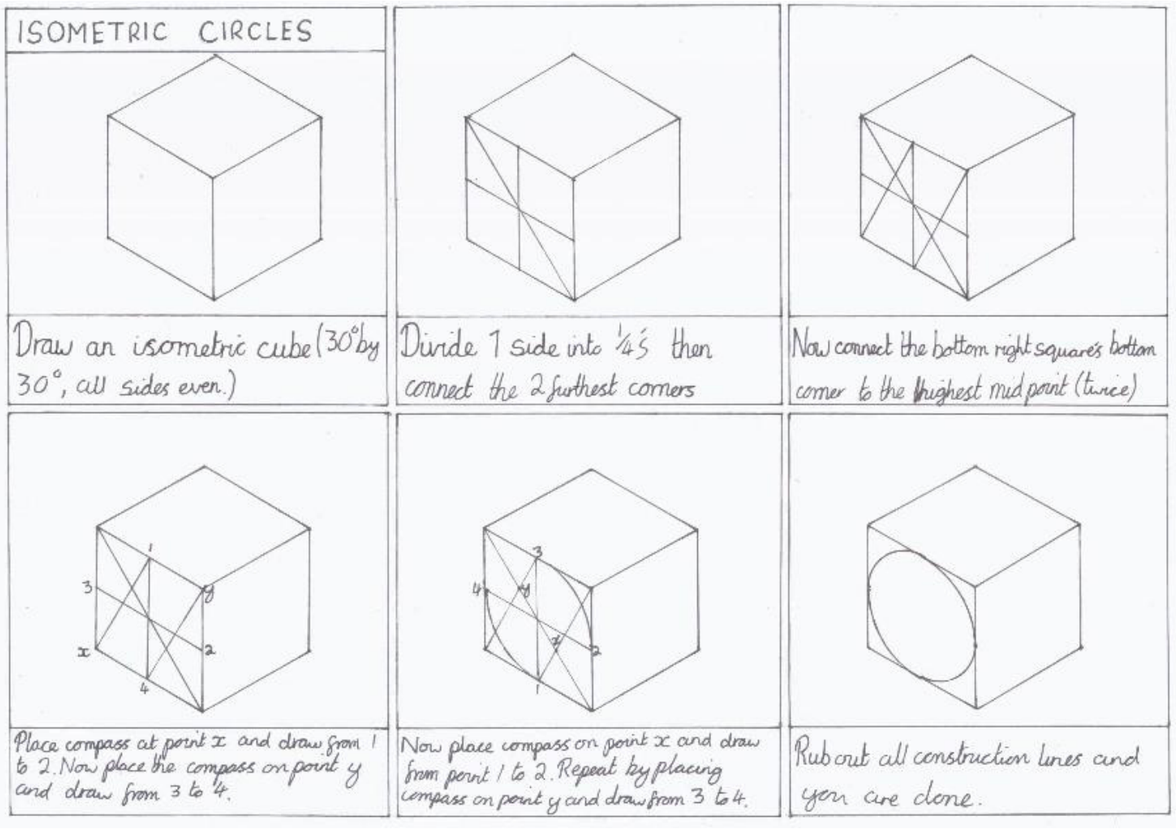


Here is an example of an Isometric circle.



Instructions for your reference:

How to draw Isometric Circles



Activity:
Following the instructions to the left AND the demonstration on the board to complete an isometric Circle

↓

Draw a 50mm Cube.

Extra Treat Page

Practice your skills by using the little arrow to start your cube and create some more isometric circles. Can you make a circular hole through the cube?

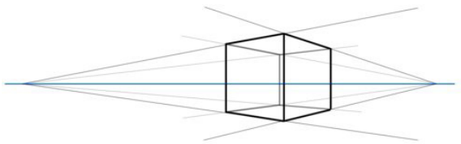
Draw a 30mm Cube.

Draw a 40mm Cube.

ASSESSMENT PIECE - ISOMETRIC SPEAKER

2 POINT PERSPECTIVE SKETCHING - REVISION

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.

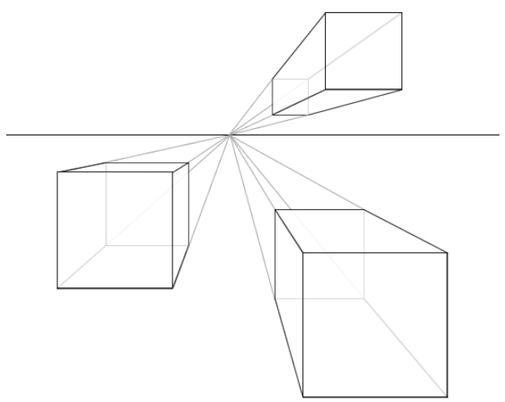
7. Start your 2 point box drawings in the spare space. The horizon line and Vanishing points have been done for you.

1 POINT PERSPECTIVE SKETCHING - REVISION

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.

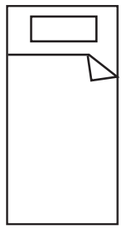
7. Start your 1 point box drawings in the spare space. The horizon line and Vanishing point have been done for you.

1 POINT PERSPECTIVE SKETCHING - EXERCISES

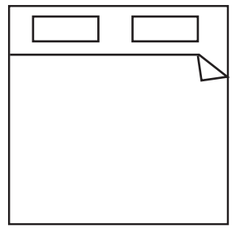
1 Point Perspective is a fantastic way to show information when drawing any type of room. You can select one wall in the room and pretend you are looking at the rest of the room from that spot.

Use the grid below to design a quick bedroom. Once you have done this sketch up a 1 point drawing of the room you have designed. Add rendering and a light source if you have time.

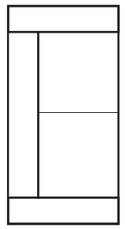
General sizes for Bedroom Furniture



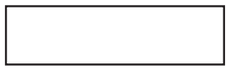
Single Bed:
1m x 2m



Double Bed:
2m x 2m

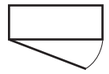


2 Seater Couch:
1m x 2m



Small Desk:
0.5m x 2m

Small Desk Chair:
0.5m x 0.5m



Small Opening Wardrobe:
1m x 0.5m

Single Chair:
1m x 1m

Concept One:

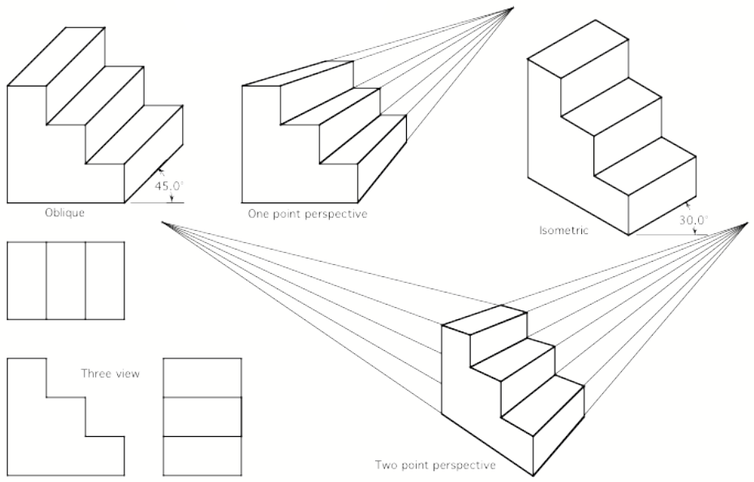
Concept Two:

Exercise: Draw your Bedroom perspective drawing here!

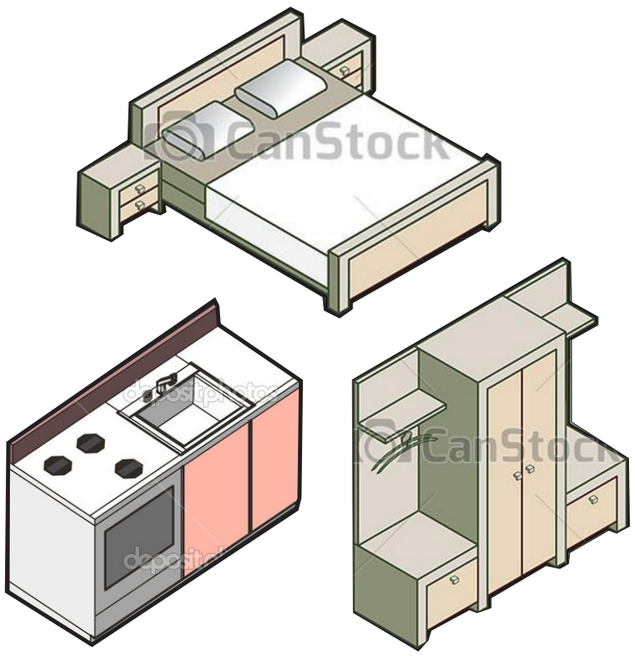
DRAWING COMPARISON PAGE:

Now that we have learnt many different types of drawing styles, it is a good challenge to compare them and find a favourite that works for you.

For Example:



Draw one of these objects in the 5 different drawing styles:



Oblique:

Isometric:

1 Point Perspective:

Orthographic:

2 Point Perspective:

RENDERING TEXTURES

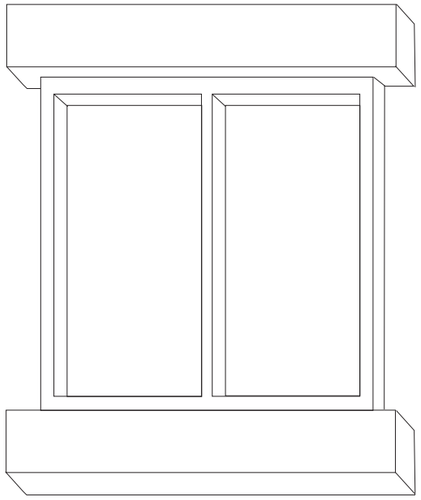
Using many differnt types of colouring and drawing instruments, we can render objects to look like their real life material.

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!*

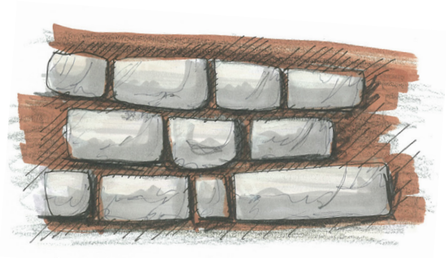
EXAMPLE

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.

RENDER PRACTICE

Draw up one of your chosen concept for your Bach project here. Use the textures you have learnt from the exercise page to render your design here.