

A2 LEVEL Section C

FACT FILES

Technology & Design

For first teaching from September 2011

For first award in Summer 2013

Design and
Communication



tech
nology
and
design



Learning Outcomes

Students should be able to:

- Use appropriate communication methods and rendering techniques to communicate innovative design.
- Use text size and style to communicate impact, product information and appeal to the variety of audiences.
- Design graphical information used on product design.



Course Content

Communication Methods

Free Hand Sketching

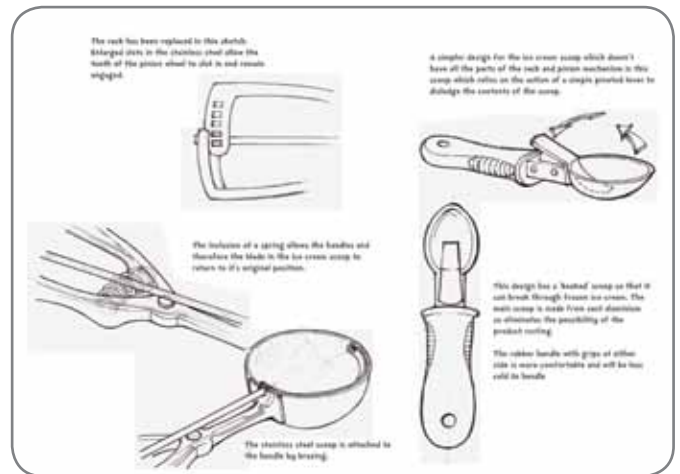
This is a technique which is used to communicate initial ideas and concepts. It is easiest and most suitable form of getting your ideas across on paper. Free hand sketching is done without the aid of any other drawing equipment such as:

1. Rulers
2. Compasses etc.

We use it in order to get our ideas down as quickly as possible before they are forgotten. Using extra equipment would slow the whole process down. A good sketch is energetic and interesting and clearly documents your thinking process.



Annotation is also an important factor in free hand sketching. It can be a very good aid for recording your thinking process.



Drawing mediums can be combined to create a wide range of artistic expressions. Regardless of the medium you choose, any artist who pursues drawing should at least become familiar with the various mediums available.

Free hand sketching can be done with any form of medium that allows you to work quickly:



- Pencils (H, 2H, HB, B, 2B, etc.)
- Fine liners
- Charcoal Pencils
- Ballpoint Pen

3-Dimensional Drawing

When drawing objects, to add realism, you must represent the depth as well as just height and width (2D), to show all 3 dimensions.

There are several tried and tested methods for drawing 3 Dimensional systems.

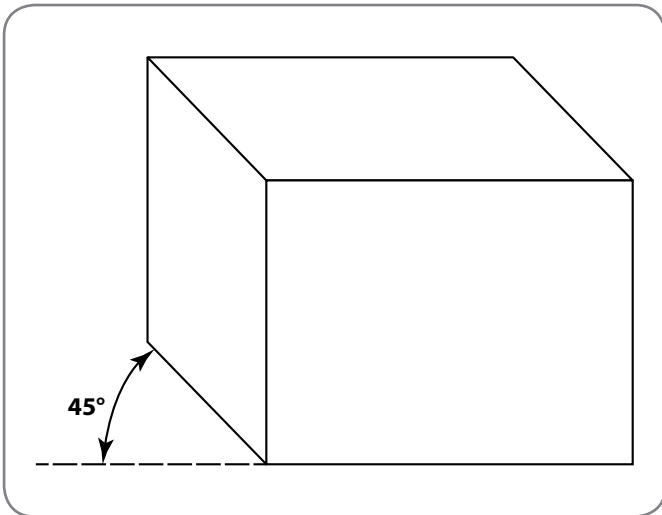
Methods we are going to cover include:

1. Oblique
2. Isometric
3. Planometric
4. 1 Point perspective drawing
5. 2 Point perspective drawing

Oblique

This is a method of 3D drawing that involves 3 lines:

1. Horizontal lines
2. Vertical Lines
3. 45 Degree lines



This is the easiest method of 3D representation and can be completed in 3 simple steps:

1. Draw the front view as normal
2. Add the top by drawing 45 degree lines
3. Add the side by drawing 45 degree lines

Oblique drawings appear unconvincing to the eye.

Oblique drawing is not often used by professional designers and engineers for this reason.

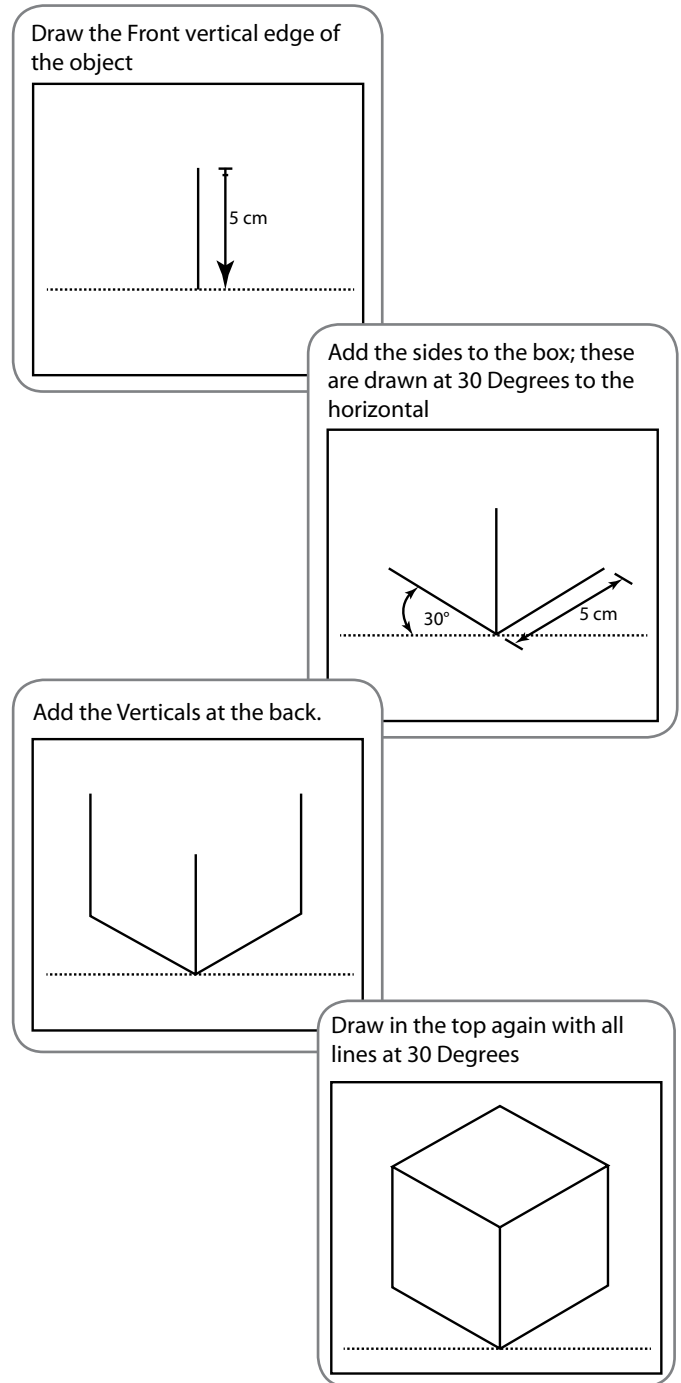
Drawing each line to its true length makes the object appear to look out of proportion. To overcome this, the 45 degree lines are drawn half their true length. This is called Cabinet Oblique.

Lines drawn to their true length are called Cavalier Oblique.

Isometric

This form of 3D drawing is made up of two different lines.

1. Vertical lines and
2. 30 Degree lines



Similar to the oblique technique, isometric drawing also shows 3 sides, but again slightly out of proportion. This technique requires more effort and time but it provides better results in the end.

Planometric

- Planometric drawings are created from a simple **plan view**.
- All vertical lines are projected at 45 degrees
- The top in the drawing is the only true shape (same as the front of an oblique drawing)
- Often used by Architects

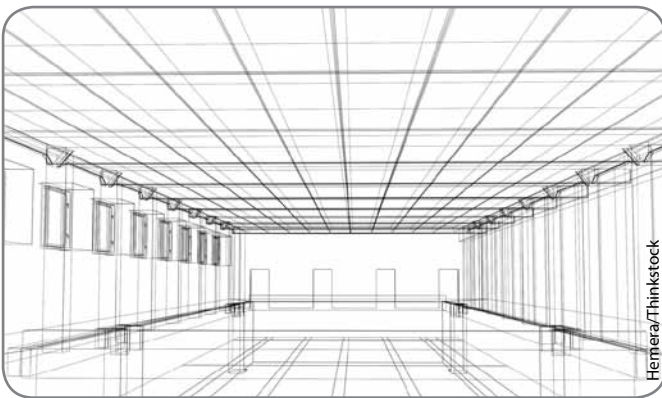


Perspective Drawing

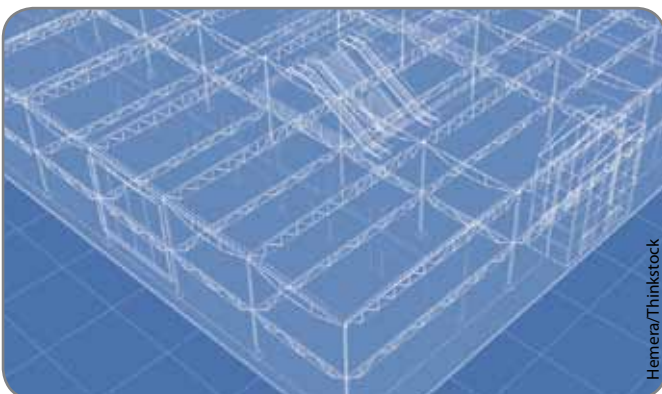
These are the most realistic of the 3D drawing techniques we have looked at.

The drawing is made up of a single or multiple vanishing points and straight lines which all converge towards the vanishing point(s).

One point Perspective

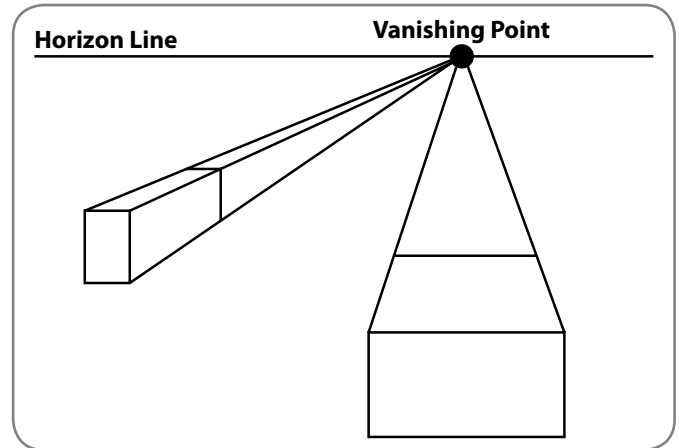


Two point Perspective



One point Perspective

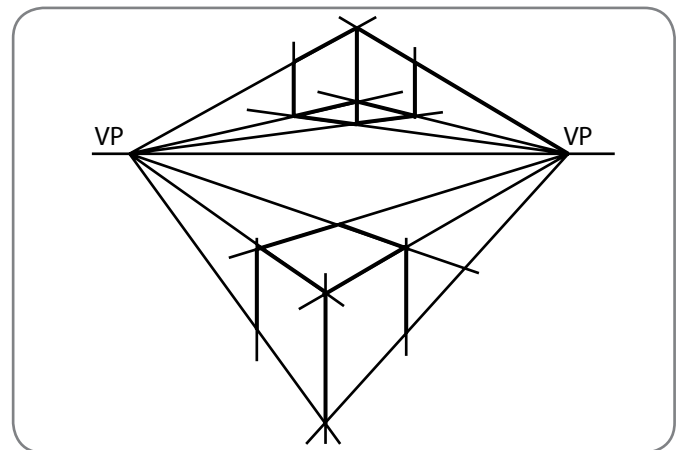
Like oblique drawing, one point perspective shows the objects flat on. A line is drawn from each corner and all these lines converge into **1 vanishing point**, which is found on what we call a **Horizon**.



Two Point Perspective

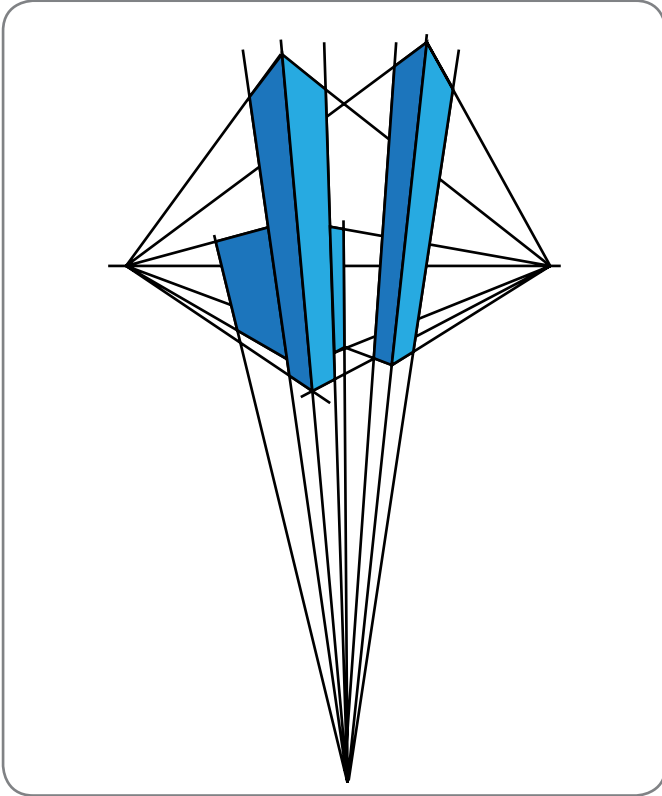
Similar to Isometric Drawings, Two Point Perspective allows you to draw the object at an angle. The drawing consists of:

- Vertical front edge lines
- 2 Vanishing Points
- 1 Horizon
- All diagonal lines converging to the one of the vanishing points



Multi point perspective

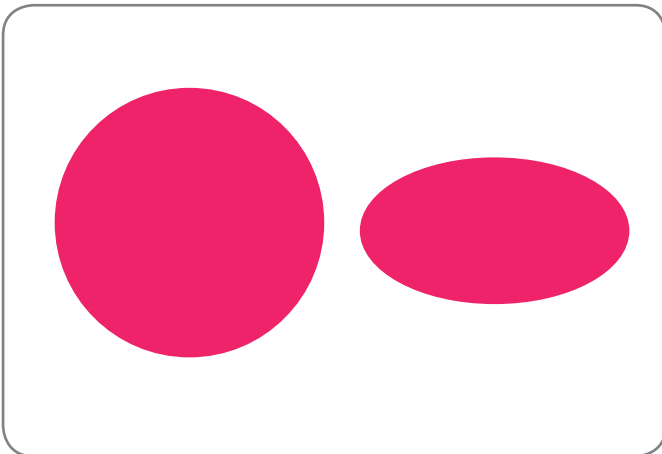
Sometimes the object being drawn requires 3 or 4 vanishing points.



Here is an emphasized example of 3 point perspective. Due to the vanishing points being too close together the building is showing too much perspective in each direction. It is vitally important to get the distance between vanishing points correct.

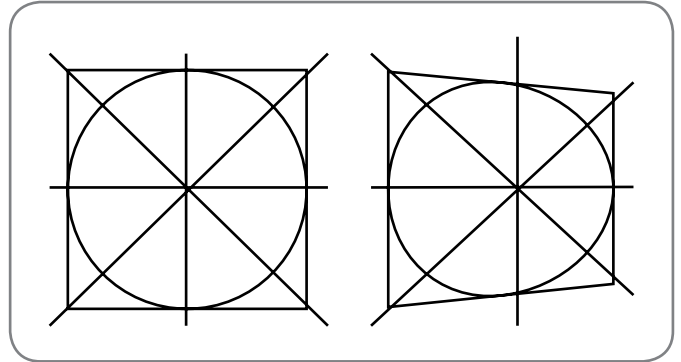
Drawing other shapes in Perspective

When a circle is drawn in perspective, it looks not like a circle but more elliptical. The two diagrams below show a circle viewed face on and a circle viewed at an angle.

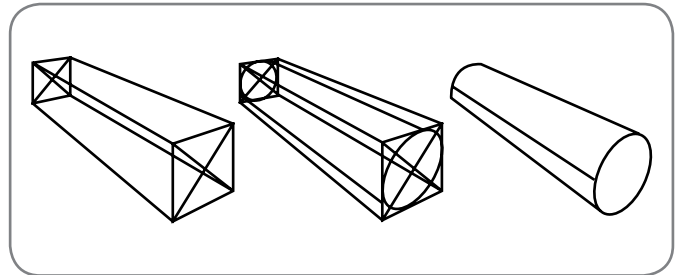


How can we draw this circle in perspective?

When a circle is drawn into a square it touches the square at the midpoint of each side. We can use this to work out a guide for drawing it in perspective, now that we know what the circle has to do.



Now we can use this basis to turn our 2D perspective circle into a cylinder.



Rendering Techniques

Light and shade

Drawing light and shade on to an object can:

- Enhance the drawing aesthetically
- Show the form of the object

Creating light and shadow



Markers

There are a range of ways of adding colour to an object. Paint, pastels, digitally or use **markers**. This can be a very satisfying approach as the markers are very easy to handle and use, there is a range of colours available and the speed they can carry out a task. The outcome of the drawing can be of a very high quality.

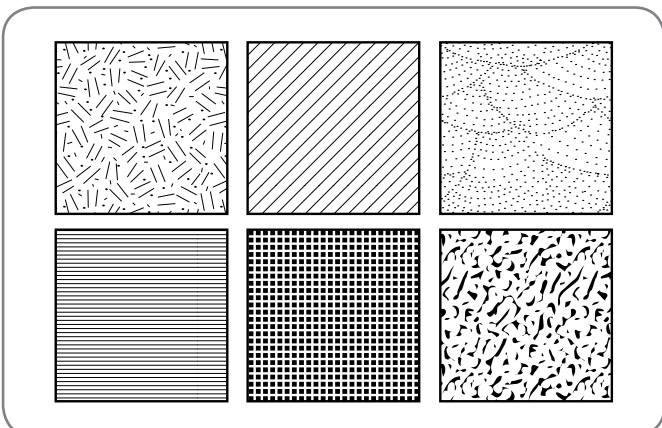


The image below illustrates rendering created by a designer using markers.



Pencils, markers, pastels are used to demonstrate several different textures and surface finishes. Replace these images with our own versions

Material Textures



Graphic Design – Text and Size

Graphic design whether it is a; billboard, package design, logo or TV advert is all about advertising and communicating messages to an audience. The design of advertising and how it looks, feels and what it communicates depends on the message a company wants to get across to their targeted audience.



Text and style are very important factors when trying to design a piece of graphic design such as a logo, poster or piece of packaging design. This is because the designs must have an:

- Identity;
- Be recognizable;
- Aesthetically pleasing;
- Transmit a message and emotion;
- Be one of a kind; and
- Be fit for purpose.

There are a range of text styles (fonts) that can be used to create these graphic designs. The type of font used will depend on the nature of the advert or piece of communication. The font is normally chosen will be chosen to help:

- Reflect the theme or design; and
- Convey a message



The size of the font used by the designer depends on the purpose of the design. If the design is a packaging cover for a small product that is to fit on a shelf in supermarket for instance, details such as the ingredients in the product or instructions for assembly will be a much smaller type size than the name of the product or promotional aspect of the product e.g.: Logo.



Over time companies or organisations may decide to change the font used to advertise their company logo or product because they feel that it graphically no longer reflects the organisation or product.

Graphical Information

The type of graphic information that is normally contained on the packaging design or leaflet designs for products are as follows:

- Information that conveys to the user how to perform an operation for example; changing a battery, how to open the product, instructions to insert a component e.g.; sim card, air freshener etc;
- Assembly or cleaning instructions;
- Routine maintenance; and
- Battery life.



Revision questions

1. Explain **four** 3-dimensional drawing methods and show with the aid of a drawing an example of each.
2. Using the **four** examples just drawn, render each drawing using a different technique for each.
3. Think of a product in today's market. Research the company and design a logo that could be used for the product.

