How to sketch objects in three-dimensional drawing techniques

1 point view
Objectives

- Type of perspectives
- Basic terms – Perspective
- Exercises - easy
  - Cube
  - Lettering shapes
- Exercises - challenging
  - Chair
  - Dresser
- Homework #1 and #2
  - Table
  - An interior room with desk and table
Three-dimensional drawing

- There are many types of three-dimensional drawing techniques. Some common methods are perspectives, isometric, and axonometric.
A two-dimensional (2D) drawing only provides two dimensions, length and width or width and height.

A three-dimensional (3D) drawing shows the three values, length, width and height.
Perspective

- is the most realistic three-dimensional representation of objects or spaces
- Items are drawn in a way that is similar to how the human eye perceives them
- One Point Perspective
  - One Vanishing Point

- Two Point Perspective
  - Two Vanishing Points
Three Point Perspective
Bird’s Eye, Worm’s Eye
  Three Vanishing Points
Basic terms - Perspective

- **Station point**
  - The point from which a person views a space or object

- **Ground line**
  - The place the visual plane meets the ground

- **Horizon line**
  - An imaginary line that is always consistent with the eye level

- **Vanishing point**
  - A point or points that are always on the horizon line

- **Picture plane**
  - A plane in space that frames and defines the perspective that is drawn

*Figure 2.2 Perspective projection*
Exercise -1 point perspective

- Draw one side of the cube 1” x 1” (start with the elevation) and select a vanishing point (mark with an 'X').

- Draw very faint lines from each corner to the vanishing point.
- Draw horizontal and vertical lines for the back of the cube
  - Lines should be parallel

- Go over the faint perspective of the cube so that the lines that make up the cube are dark and sharp.
- Show line weights
Exercise – complete the letter shapes below
Round section steel tube chair
One point perspective – round section steel tube chair

- Draw the side view of a chair (elevation) and mark the single vanishing point with an ‘X’
- Note the position of the vanishing point is placed on the left hand side
- You may need to experiment a little with the position of the vanishing until you find what you consider to be the right place.
- Draw faint lines from each corner/edge of the chair projecting them back to the vanishing point
- Draw horizontal and vertical lines to add the width to the chair (lines should be parallel)
  - by drawing faint lines
Notice how the top and bottom of each leg has been shaped to give the impression of curved surfaces (round section steel tube)

Go over the faint lines that make up the chair to show the weights

Heavy and Intermediate
- Add color and shape. Remember, steel is often chromed (a silver, reflective surface). Choose a very light pencil lead (4H or 6H) for grey to reflect the type of material used - optional
- Use 3 different pencil leads to show line weights
Square section wood chair
One point perspective – square section wood chair

- Drawing individual piece of furniture in single point perspective
- Show line weights
Dresser in one point perspective
Dresser in one point perspective

- Draw the rectangular shape, the basic shape of the dressing table
  - Side or elevation of the dresser
- Positioning the vanishing point high on the right hand side
Construct the drawers

- Remember to project all guidelines back to the vanishing point
- Equal spacing for (3) drawers

- Draw horizontal and vertical lines to add the depth to the dresser (lines should be parallel)
  - by drawing faint lines
Add simple door handles and a mirror on the top.

- Notice how the door handles line up vertically
  - Draw two vertical parallel faint line to construct all the handles
- Show line weights
Homework #1 and #2
Drawing a wood table with 1 point perspective
Homework #1 - Table (1 point perspective)

- Draw a side of the table and the position of the vanishing point
- Positioning the vanishing point high on the left hand side and mark it
  - one side of the table will be seen when the drawing of the table is completed (elevation)
- Start projecting faint lines from each of the corners/edges of the front/side view of the table.

- Starting with the table top, project guidelines back to the vanishing point and complete drawing the top by adding thickness.

- Then project more guidelines for each of the front legs, adding thickness to each one.
The most difficult part is ensuring that the back legs line up with the front legs.

Mark a faint line for back legs.
- Table top is not lined up with legs.

One way of ensuring that this happens is to project faint lines as shown on the drawing above and the below drawing.
- Line up the top and bottom of the front legs with the back legs.

Show line weights.
Include wood grain to the top of the table. (optional)

Choose a very light pencil lead (4H or 6H)

Show line weights
Line Weights exercise

- Show line weights
- Don’t show
  - Guide lines
  - Value
  - HL
Homework #2 – An Interior room with desk and table

- Draw a room in one point perspective
- Once you have mastered drawing individual pieces of furniture in single point perspective you will be ready to design a simple room which includes basic furniture
- The same techniques are used whether drawing the skeleton of a room or the pieces of furniture going inside it
- Use a single vanishing point and project guidelines back to it
2nd Perspective - Homework

- Draw a rectangle and mark a vanishing point
- Project all the corners back to a vanishing point
- Remember, all lines should be faint at this stage (light lines)

- Draw another rectangle which represents the back of the room (mark a depth)
  - Vertical and horizontal lines should be parallel
- This must line up with the guidelines projected back to the vanishing point from the front rectangle
2nd Perspective - Homework

- Complete the basic room by erasing out line ‘A’ and darkening (heavy line) the profile of the entire room
- Adding a table and a desk
  - Show line weights
    - Heavy and Intermediate