# **Drawing Perspective**

A Supplementary Activity for the Botanical Illustration Course



How to approach perspective, bends and curves in natural forms

### **Drawing Perspective**

This document is intended to be studied in advance of 'Creating as Study Page'. It is not assessed but provides practical advice with practice exercises to assist you with your drawing.

In Part one of the course you completed portrait drawings of leaves and flowers, however, in reality plants are generally not viewed in such rigid positions and we have to be able to draw their twists and turns in perspective, which makes matters rather more complicated.

In Part Two of the course, your studies will inevitably require some perspective drawings. This supplementary document will introduce you to drawing parts of a plant in perspective.

#### What is Perspective?

First of all it's useful to define what perspective is:

The representation of a 3 dimensional object on a 2 dimensional surface to give the impression of height, width, depth and position of parts in relation to each other.

To be able to draw objects in perspective we need to be able to draw what we actually see opposed to what we know to be present. This means that we have to disregard what we know and only draw the visible lines. This will involve observation of the angles and simple shapes and also looking at how those shapes become smaller with distance. You will also need to consider the view point for a drawing. The view point is the natural and best position of the subject for the viewer. Below is the simplest example showing a box in perspective, of course plants are not like boxes but we can actually fit plant parts into geometric shapes to help us to understand the effect of distance.

#### Simple example of a box using one point perspective.







Figure 2. A box on the ceiling, above and to the right

If a box is sitting on a floor, the front of the box is nearest to the viewer, the effect of distance causes the box to recede.

The red centre line is the **horizon line** which represents the eye level **view-point**. Where the lines converge in the centre is called the **vanishing point**.

In figure 1. When the box is below the horizon and positioned to the left, we can see the top and right side of the box. The effect of distance makes the back of the box appear to be smaller than the front because it's nearer to the vanishing point.

If we moved the box to the center where the vanishing point is, we would only see the end of the box.

In figure 2. If we were to move the box above the horizon and to the top right we see the underside and left side of it.

This is a simple example but helps us to think about how position and shape appears with the effect of perspective. While this example of one -point perspective is simple, it is usually used for drawing buildings and more formal shapes but is equally useful in plant drawing because the same laws of perspective apply -where objects nearer appear larger than those further away, albeit at a fairly short distances. Also, the eye-level view will allow us to see the upper and underside of plant parts, such as leaves. Unfortunately with plants it is a little more complex because there are many twists, turns and curves to confuse us. Nevertheless, the principle is the same and should be kept in mind at all times as most objects can be broken down by observing the basic shape which they fit into.

## **Drawing Perspective, Simple Leaf Foreshortening**

Foreshortening often confuses students but by measuring and looking at shapes, as though we are looking through a glass pane, we can understand how to interpret what we actually see with line drawing.

For this activity use a fairly firm leaf that doesn't wilt easily: shiny leaves are a good choice because this adaptation has evolved to prevent water loss - so they don't droop. examples include, Laurel or Rhododendron leaf.

If you hold a leaf and observe it at different angles you will see how the size and shape changes as the leaf tilts away. Imagine the leaf within a box and note the height and width.



i)'Straight on' portrait view. Observe the **height and width** and the shape of the curves. The overall shape is **rectangular** and **portrait** 



ii) Tilted away, observe the change i.e. shortened in the height. The mid rib remains central and the widest point remains the same here but the curve is more acute. The overall shape is square.



iii) Tilted to approximately 90°. The shortening is significant but the width and position of the mid rib stay the same. The overall shape is rectangular and landscape.





iv) When the leaf is viewed from the side and rotated the situation is the same. You can see in the above images that the length of the leaf remains but the height is shorter. The leaf may also be coming forward, twisted or bent over but the same rules of perspective apply.

### Measuring

The best way to measure the height and width of a subject is to use either a transparent ruler held next to the subject, you can also use calipers also the simple method for estimating proportion can be done is using your thumb held against your pencil. Hold the pencil vertically at arms length and close one eye, use your thumb on the pencil to gauge the height and width (Fig.3) move the pencil around to find and observe the angles (Fig 4.)

Try to think about the subject sitting within a more formal shape, so that the shortened leaf fits into either rectangular, triangular or square shapes.

When drawing always begin by lightly plotting in the shape that the subject sits

within. For leaves then plot in the mid-rib followed by the outer border of the shape ( as you did with the leaf

portraits previously).

Make light pencil marks initially.

Use your pencil and thumb to judge the angles of the subject and any curves.

The situation becomes slightly more complex when the leaf is bent, twisted or angled but by **putting in the mid-rib first** you will keep track of the line of continuation, where the line can disappear and reappear in a twist (fig 5).



Figure 4. Identifying angles using the pencil



Inevitably you will encounter more complex overlaps with larger compositions, don't be afraid of making working sketches. In this case, draw the subject in the initial sketches as though all parts are transparent, this is called a 'skeleton drawing' which enables you to see how parts are connected and reduces the possibility of alignment errors with overlaps. So far we have discussed drawing 'only what you see' so this might seem a little contradictory at first but in this case you are simply drawing all of the overlying parts. This approach will help you to gain a better understanding of the perspective and achieve better connections and continuation between leaves and stems and you will have the peace of mind of know that your drawing makes sense!

Figure 5. Plotting the mid rib first, the leaf backbone

This process of **skeleton drawing** is particularly useful when planning a drawing where there are many overlapping leaves, stems and flowers etc. All too often potentially good work is ruined by misaligned lines, such as in leaf bends or where stems disappear and reappear behind leaves or from the pedicel through to a flower's stigma.

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Figure 3. Measuring with the pencil

#### Drawing the 'Skeleton' in Practice, Honeysuckle

As mentioned previously it is most useful to draw the plant as though it is transparent, so what does this actually mean in practice?

- Work out the overall shape and area of the subject by measuring the maximum height width using a ruler Lightly mark out the area using an H grade pencil. This marks the parameters of the subject on the paper
- Draw in all the main stem or center line using fairly lightweight sketching. This is the 'backbone' of the drawing. You can see below the stem follows right through from the fruit to the end of the stem.
- Draw in the mid rib for ALL of the leaves, being careful to observe where they are in relationship to each other. Again use the pencil and thumb method to gauge the angles.
- Lightly mark the basic outline shapes (curves) of the leaves by using the pencil and thumb method.
- Make adjustments where necessary to avoid any awkward looking overlaps or touching leaves. Parts should overlap comfortably or miss each other completely, rather than just touching. One of the best way of judging whether or not the drawing needs repositioning is to look at the 'negative space' i.e. the white gaps on the page, check that they don't create distracting or unbalanced shapes.
- Once you have completed your skeleton you can draw in the final outline using a softer HB pencil over just the lines that you need for the final drawing (fig. 7). The drawing can now be transferred to your watercolour paper using tracing paper or a light box.



**Figure 6.** Initial 'skeleton' working sketch within a bounding box for the total area covered. Continuation of lines is shown where dotted lines are, this reduces the risk of misalignment. Parts are measured and drawn using the main stem as the anchor point and then plotted using the leaf mid ribs. All parts are placed into measured boxes or shapes and the lines for final drawing are plotted in.



**Figure 7.** The final drawing without the working lines. Once checked for accuracy the preparatory drawing can be transferred to paper for tonal rendering or watercolour.

The approach described above is exactly the same with flowers and fruits etc. Often such subjects involve ellipses, circles, spheres, cylinders, cones and triangles when looking for the basic shapes in an flower or fruit drawn in perspective.



A Foxglove is essentially a cylinder, but flattened at the top.



A semi-closed clematis flower is cone shaped.

# Supplementary Exercises (not assessed) All of the following should be drawn using line only.

1.Draw a leaf positioned as follows:

- I. Staight on portrait
- II. Approximately 45°
- III. Approximately 90°
  - 2. Repeat the above for a side view
  - 3. Draw a leaf bending

4. Make a skeleton drawing of a flower or leafy stem. Make a finished line drawing of the same drawing.

5. Draw two or three flowers in perspective using the methods described in this document.

Refer to the information in the document for guidance.

## **REMEMBER:**

- Think in shapes
- Measure, use your thumb and pencil to gauge angles
- Find the anchor or centre point
- Look for angles
- Draw what you see
- Make sure that parts connect correctly

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