Colour

The use of colours when sketching can be a very effective tool. Colours can improve presentation, can identify materials being used, can highlight contrasts between two different parts of an object and/or can be used to draw attention to a particular part of a diagram. A note of caution here, the use of too much colour can confuse the viewer and can make a sketch fussy and distracting. The main function of sketches and diagrams in technical drawing is to convey an idea or to help solve a problem, they are not visual art in the same way as an artist's sketch or painting is.

Primary Colours

Red, yellow and blue are known as the primary colours and are shown on a colour wheel in Fig. 14.72.

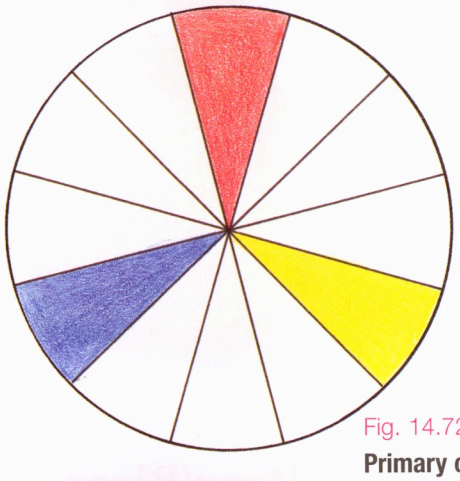

Fig. 14.72
Primary colours

All other colours can be achieved by mixing these primary colours. By mixing red and yellow, for example, orange is produced; yellow and blue mixed gives green; and blue and red mixed gives violet. Colours obtained by mixing two primary colours are called **secondary colours**. An even greater range of colours is found by mixing a primary colour with a secondary colour. These colours are termed **tertiary colours**.

Black and white are neutral colours and when mixed with other colours affect the tone of the colour.

The colour blue in Fig. 14.74 decreases in tone from left to right. This is achieved by allowing more of the white background to emerge through the colour.

Fig. 14.74

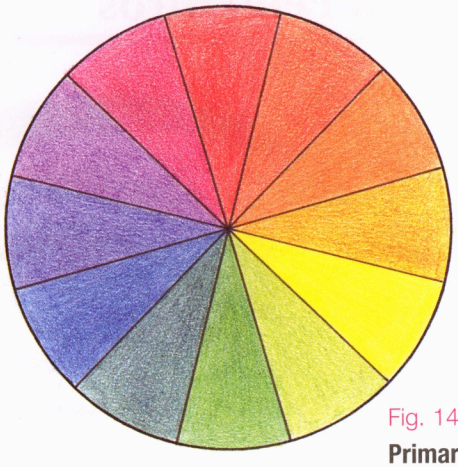

Fig. 14.73
Primary, secondary and tertiary colours

Application of Colour

Colour may be applied to sketches using many different mediums:

- watercolour,
- felt-tipped pens,
- colouring pencils,
- coloured pens/biros etc.

Each of these has its own characteristics.

Watercolour

Watercolours are used for shading of large blocks or areas. They are usually used as a wash over a finished drawing rather than as a means of building up the drawing itself. They can cover a large area quickly but do not lend themselves to intricate detail with many colour changes.

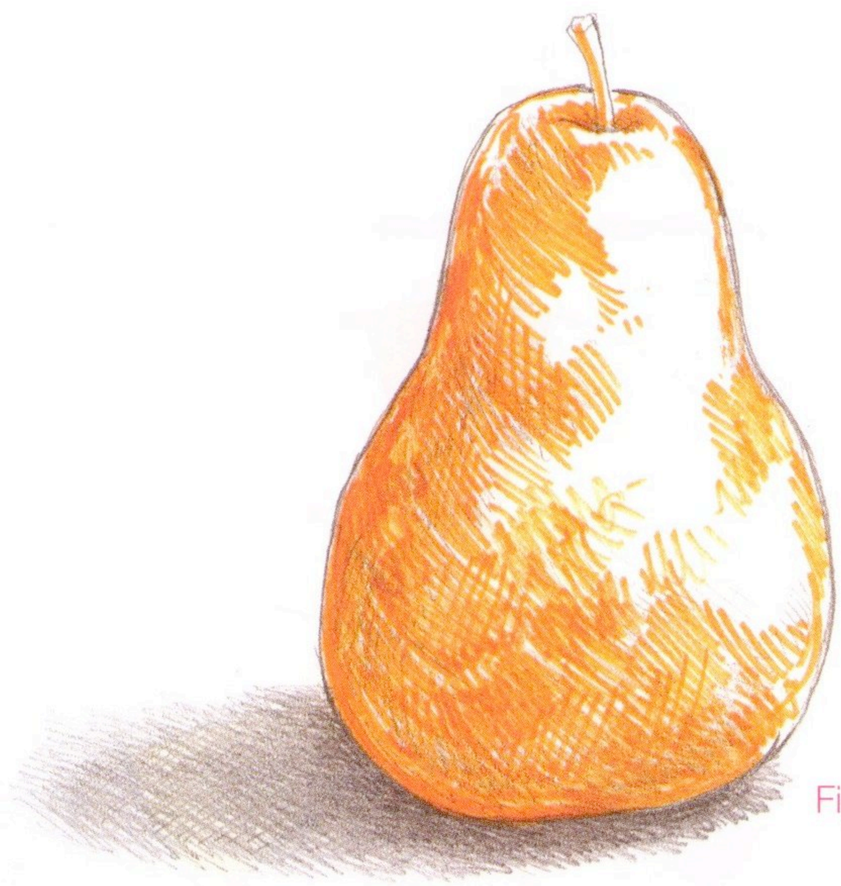

Fig. 14.75

Felt-tipped Pens

Felt-tipped pens are useful for block shading or where a coarse application of colour is adequate. They cannot be removed once applied which may cause problems. The colours produced are very vibrant. Variations in tone are difficult to produce, Fig. 14.75.

Coloured Pens/Biros

These can be used very effectively using the methods described earlier for pencil sketching. Obviously it must be always remembered that the ink will not be erased in the same way as a pencil. However, a biro/pen can give a more permanent feel to a sketch and will not be smudged when handled. By tracing over light pencil lines we can combine the advantages of sketching in pencil with the advantages of having sketches finished with ink, Fig. 14.76.

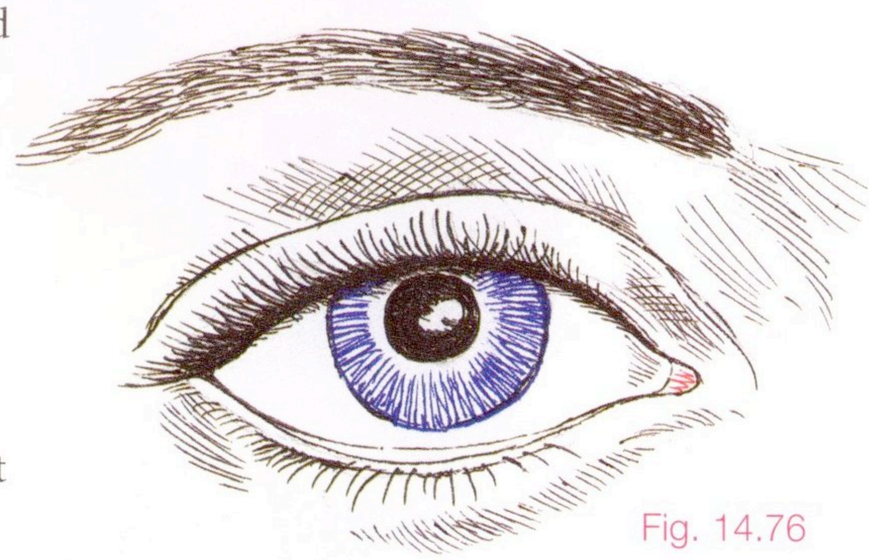

Fig. 14.76

The thickness of the lines produced cannot be varied when using biro but the line quality is very good. The range of colours available is also limited and they do not lend themselves to the mixing of colours, Fig. 14.77.

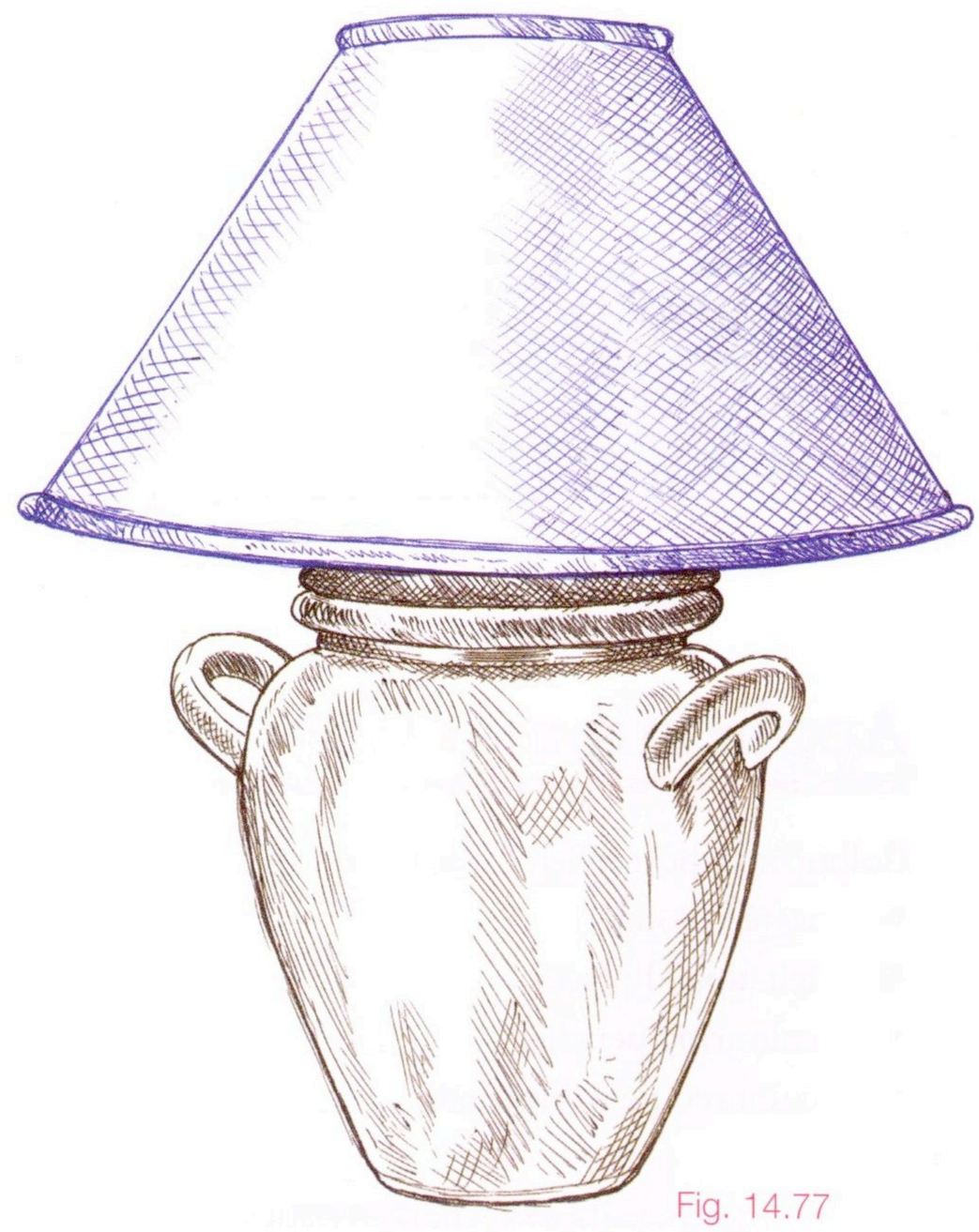

Fig. 14.77

Colouring Pencils

Colouring pencils provide one of the best means of applying colour to a sketch or diagram. They come in a wide range of colours and also can be mixed by applying one layer over another. They can be sharpened in many ways to give different line widths and can be erased. Sketches may be drawn from start to finish using colouring pencils or they can be used to enhance a pencil or ink sketch.

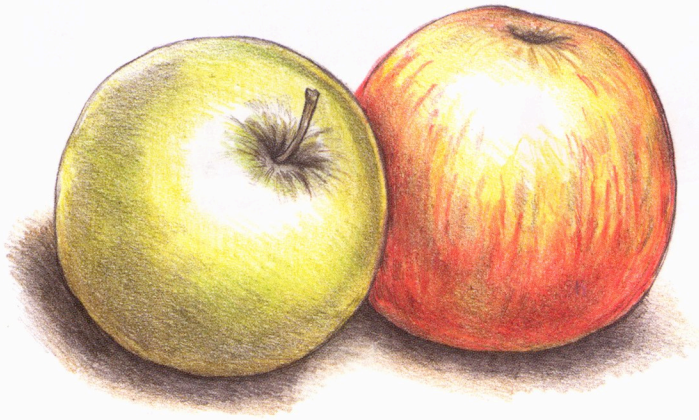

Fig. 14.78 **Pencil sketch with colouring pencil applied afterwards**

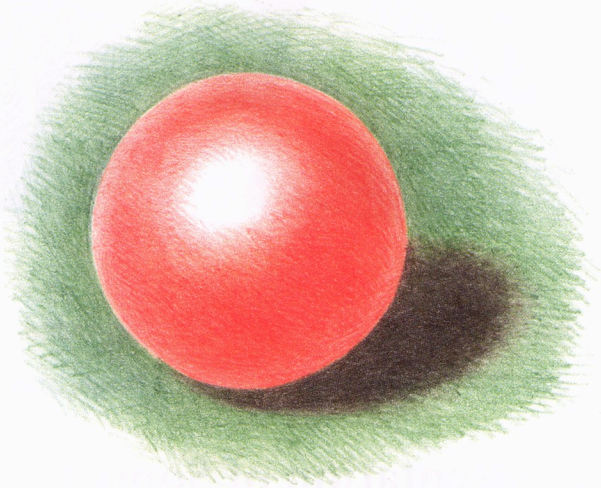

Fig. 14.79 **Sketch done solely with colouring pencils**

Tone and Texture

HIGHER LEVEL

When we use hatching, stippling or scribbling to create a tonal value we are simultaneously creating texture. Furthermore, as we try to describe a material's texture with lines we are also creating tone. There is a constant relationship between tone and texture. We should therefore always be aware of this when attempting to produce either.

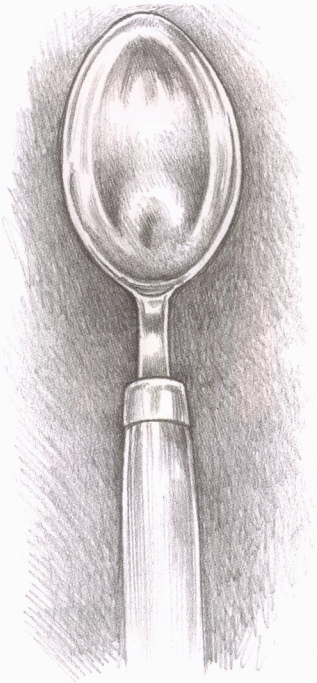

Fig. 14.80

Fig. 14.81a
Short strokes

The texture of an object may be smooth or rough, high sheen or dull, hard or soft. When rendering tone on a sketch it is often possible to convey this texture quality through the use of different shading techniques. Large-scale strokes will produce a rough texture while small-scale strokes produce a fine-grained effect. Polished surfaces depend on the reflection of light to convey their texture. They reflect light brilliantly and appear sharply in focus. Matt surfaces absorb and diffuse light and therefore appear less sharp. Coarse surfaces cast shadow patterns on themselves thus revealing their textural quality.

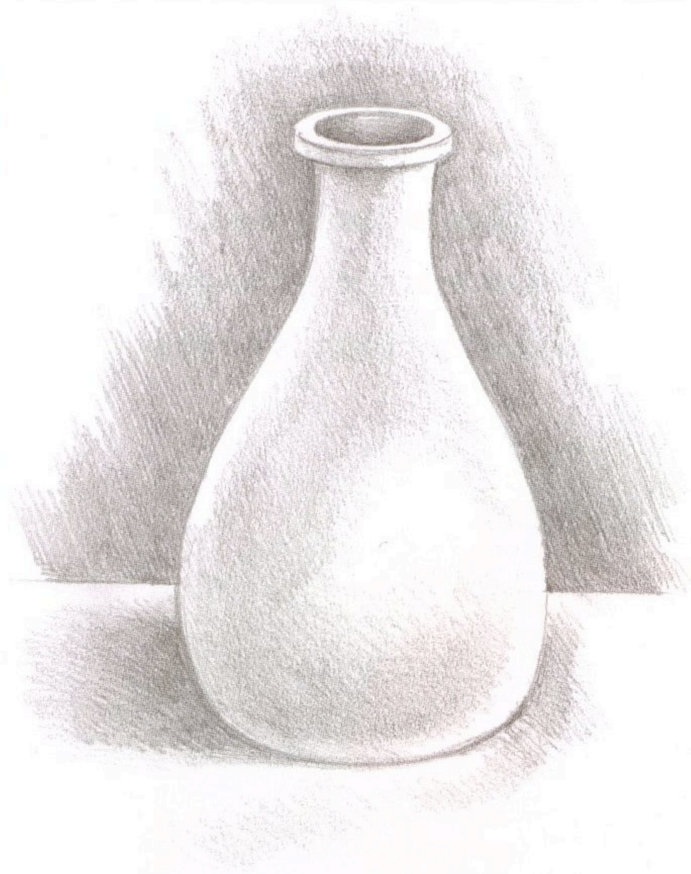

Fig. 14.81b

Smooth, blended strokes

Fig. 14.81c

Rough, large strokes

Fig. 14.81d

Irregular scribble

Representation of Some Common Materials

By critical analysis of the texture and colour of various materials we should be able to accurately represent these materials in our sketching.

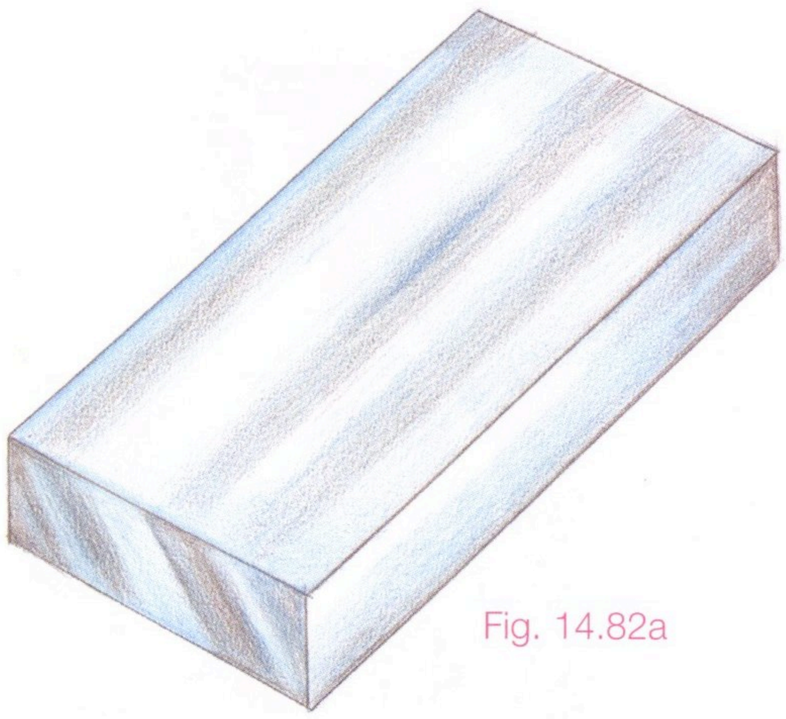

Fig. 14.82a

Fig. 14.82b

Metal

Metals have a smooth surface and are highly reflective of light. Shading on the surfaces is unidirectional and uses straight lines. Shading on the end is inclined. The shading is laid down in bands as shown in Figures 14.82a and 14.82b. For highly polished surfaces it is important to catch the light high points and the reflections of other objects in the surface, Fig. 14.83. Blue/grey is best to represent steel while an orange/yellow best represents brass or gold.

Fig. 14.83

Wood

Wood can have many variations both in colour and texture and also has the added interest of grain pattern. The faces of a rectangular block of wood will show quite different grain patterns but it should be remembered that the grain patterns are all interlinked. If a grain feature reaches an edge of a face it will continue in some form on the adjoining face. Some woods show very little grain pattern while for others the grain pattern dominates each face.

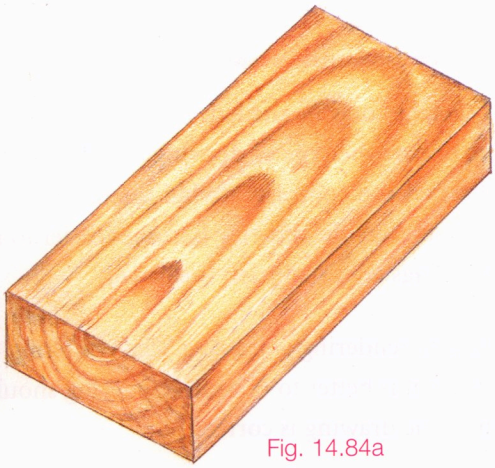

Fig. 14.84a

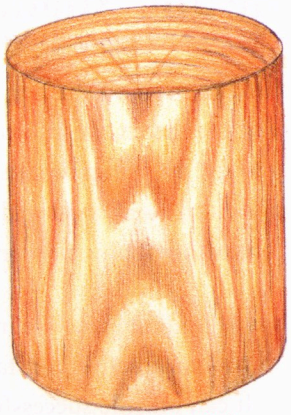

Fig. 14.84b

The colours used are generally light brown or orange as a base colour, with a darker brown or orange to show the grain.

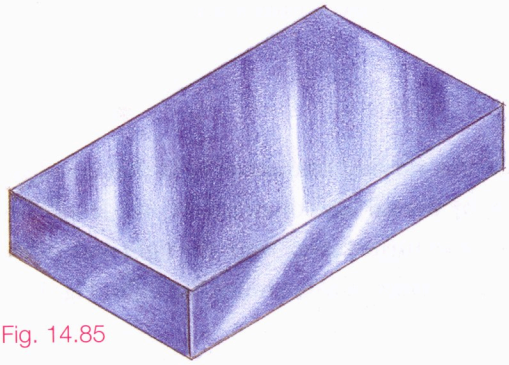

Fig. 14.85

Plastic (opaque)

Opaque plastic is smooth and generally shiny with often strong colouring. Attention should be paid to the light high points and colour depth.

Clear plastic and glass

It can be difficult to depict a transparent or semi-transparent material. The standard way of representing colour materials is to draw groups of parallel lines using a ruler. These lines are angled across the surface as shown in Fig. 14.86.

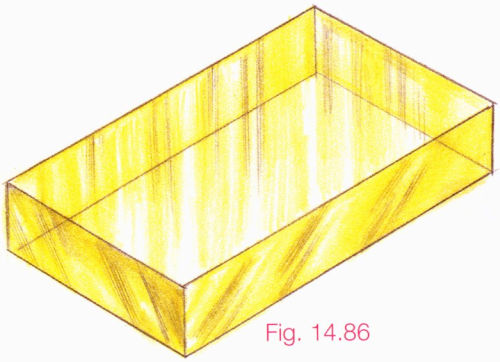

Fig. 14.86

Because of the reflective nature of these materials when they are grouped together they will reflect light onto each other. Shade and shadow will not be uniform in value as a result of this bouncing light. Curved glass or plastic will also distort the image of an object seen through it, Fig. 14.87.

Fig. 14.87