A floor plan layout can be made much more interesting by the use of one-point perspective.
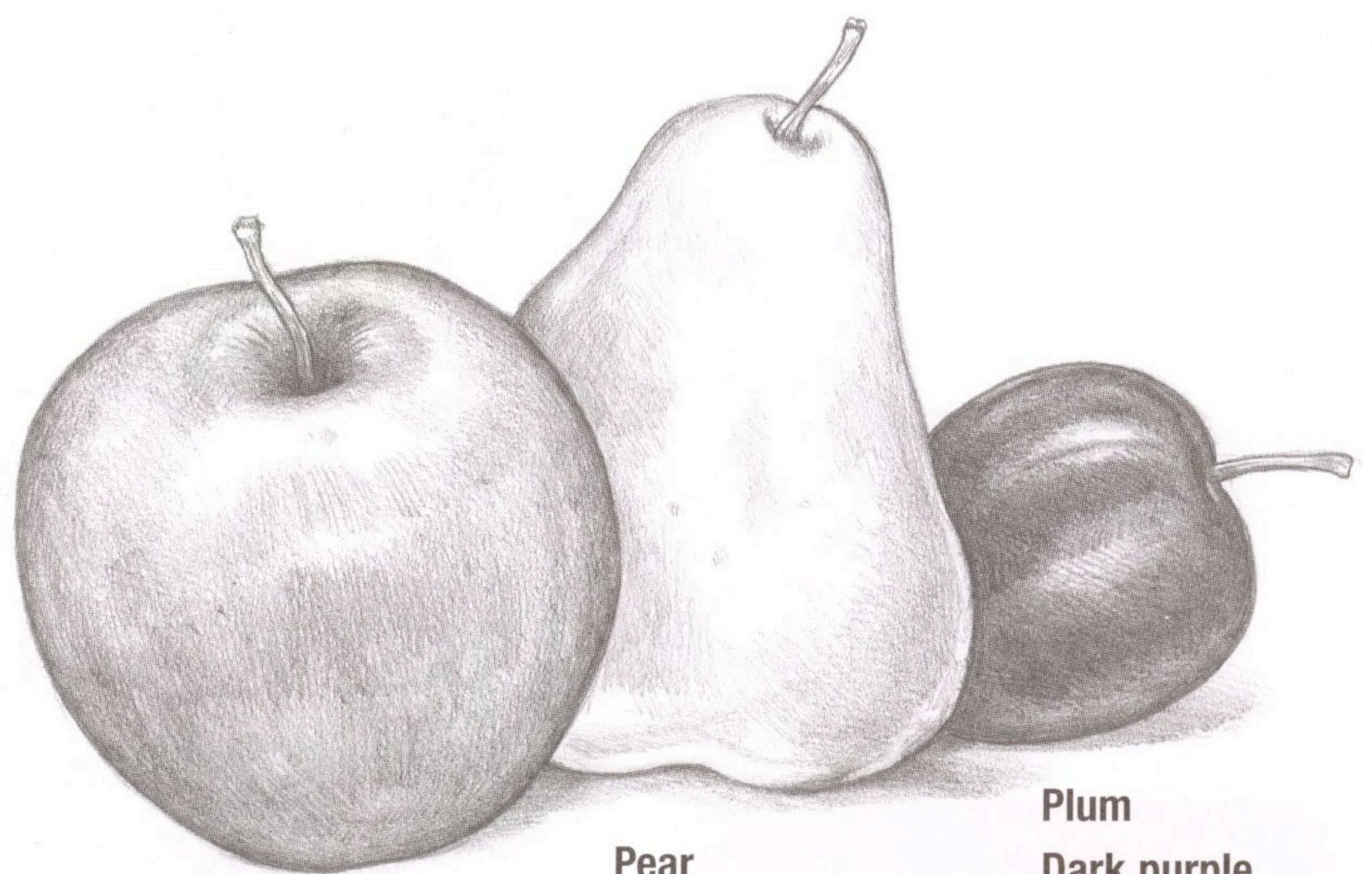
Fig. 14.48

Tone

Lines are obviously essential to outline shape, areas and contours. However, certain visual qualities of a surface cannot be fully described by lines alone. In order to improve our representation of such surfaces we must become skilful in the rendering of tonal values. Through the use of such rendering a good sense of light, mass and space are produced. Sketches can change from being flat and two-dimensional to being vibrant and three-dimensional.

Seeing patterns of light and dark is essential to our perception of objects. In a drawing it is tonal values that depict the lightness or darkness of an object, that describes the play of light on their forms and clarifies their arrangement in space. Tonal value can also be used to depict colour. Fig.

Apple
Dark green

Pear
Light green
or yellow

Plum
Dark purple

Fig. 14.49

14.49 shows an example of this. Tone is used both to indicate light and shade and also to show colour. It can be seen here that the drawing is completely drawn with pencil yet we can easily visualise the green apple, the light green or yellow pear, and the rich dark purple plum.

Techniques Used to Create Tonal Value

Using the traditional medium of pencil, there are several techniques for creating tonal values. These are:

- hatching,
- crosshatching,
- scribbling,
- stippling.

We will look at each of these separately.

Hatching

Hatching in sketching consists of a series of more or less parallel lines. These lines, drawn freehand, may be either long or short. Variation in tonal value is achieved in two ways:

- by varying the grade of lead used or increasing/decreasing the pressure with which we draw,
- by varying the spacing and density of the hatching.

The most flexible freehand technique for hatching uses relatively short, rapid, diagonal strokes. Start at the edges and work inwards. Strokes may overlap slightly. Apply a second or even a third layer of strokes at a slightly different angle to the first to build up the density and tonal value of an area. Hatching on a curved surface should curve to depict the contours of the surface.
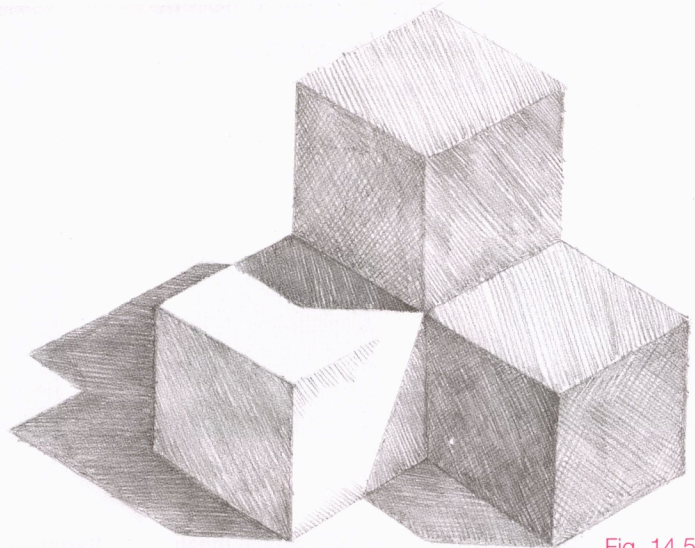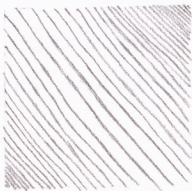
Fig. 14.50

Fig. 14.51

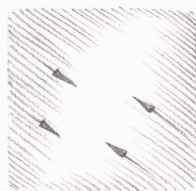**By varying the spacing of the hatching we can vary the tone.**

Fig. 14.52

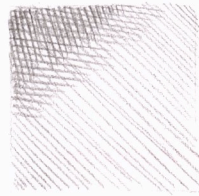**Work inwards from the edges to produce crisp, clear, precise, edges.**

Fig. 14.53

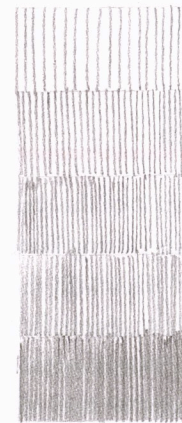**By applying additional layers of strokes at a slightly different angle we can also vary the tone.**

Fig. 14.54

In this diagram the variation in tone is obtained by varying the spacing of the lines and by varying the line darkness.

Crosshatching

Crosshatching uses two or more sets of parallel lines to create tonal effects. The simplest type consists of two perpendicular sets of parallel lines which gives a simple weave pattern. By adding more sets of lines, darker tonal values can be achieved.

In practice, hatching and crosshatching are combined into a single technique. Simple hatching is used to provide the lighter tones and crosshatching is used to render the darker values, Fig. 14.55.
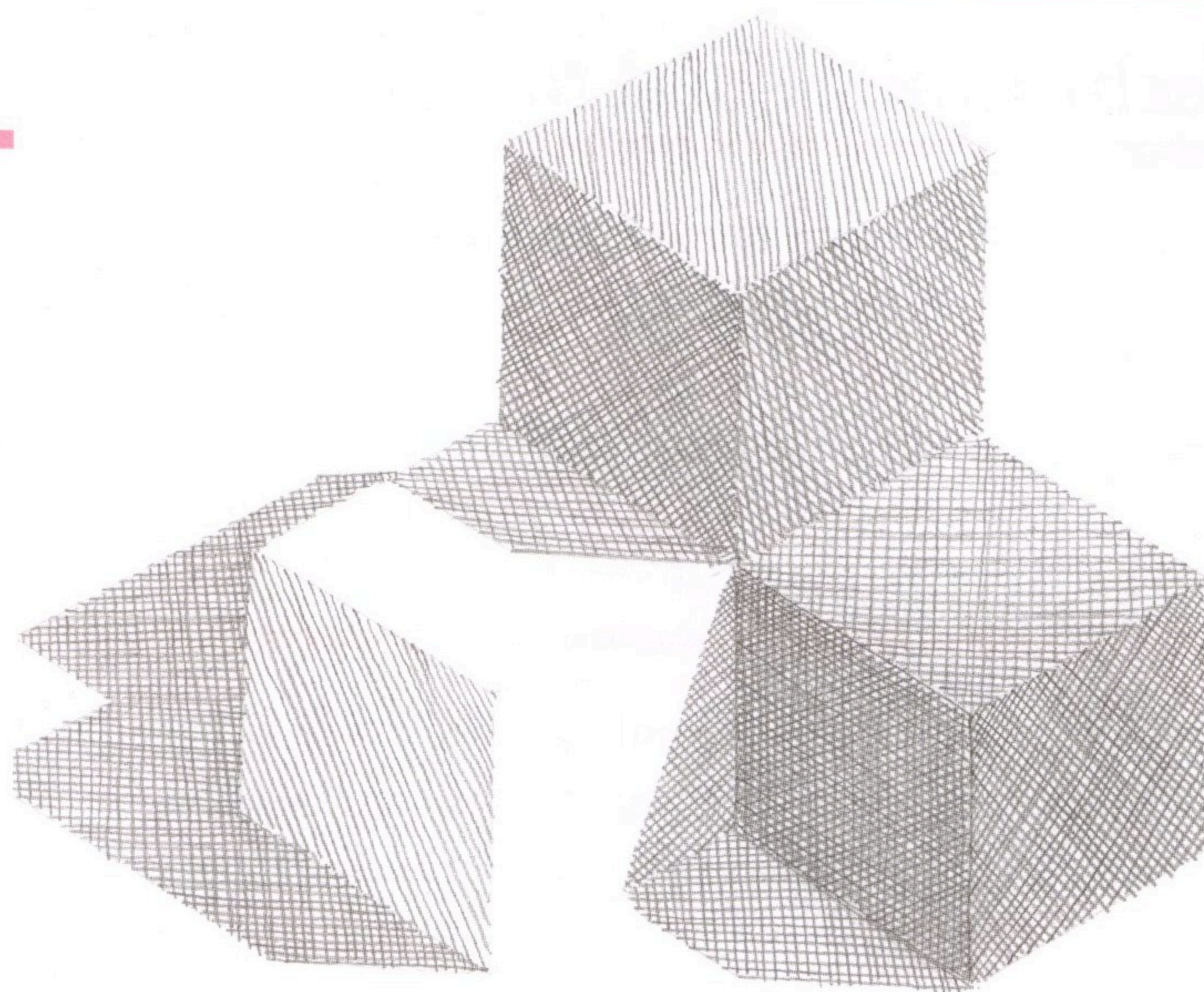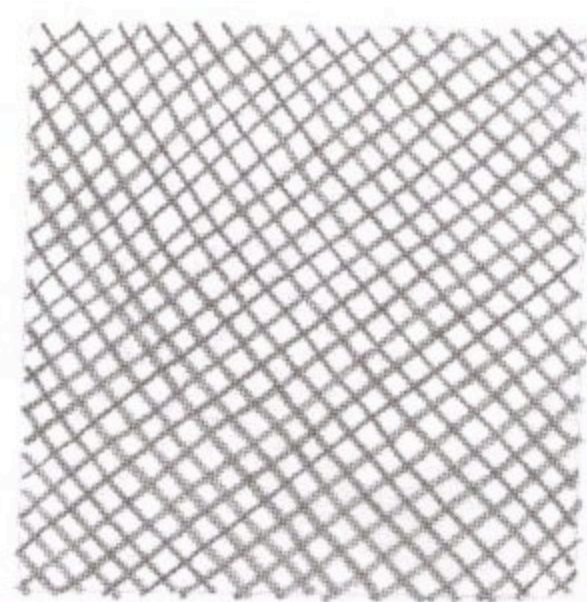

Fig. 14.55

Fig. 14.56

A simple crosshatch weave is very effective. The orientation of the weave will also give a different effect.
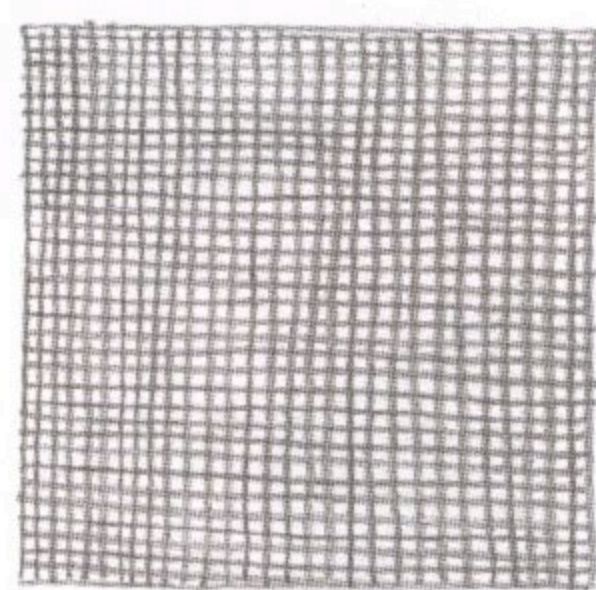

Fig. 14.57
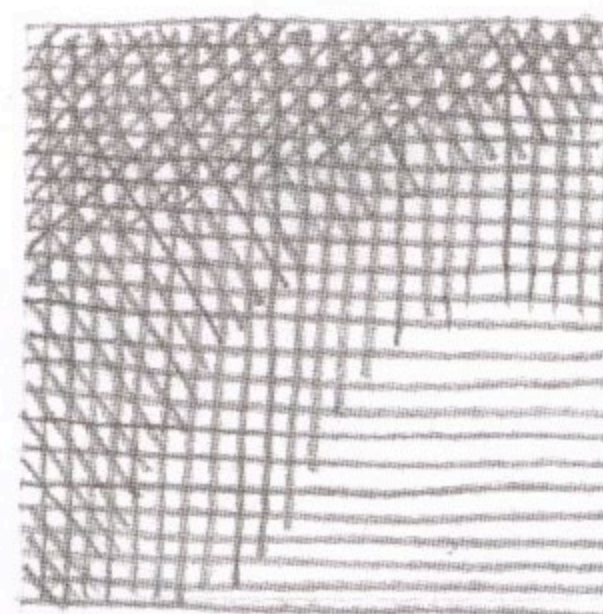
A tight weave mesh produces a strong tonal value.

Fig. 14.58

Variation in tone across a surface is achieved by varying the degree of hatching.
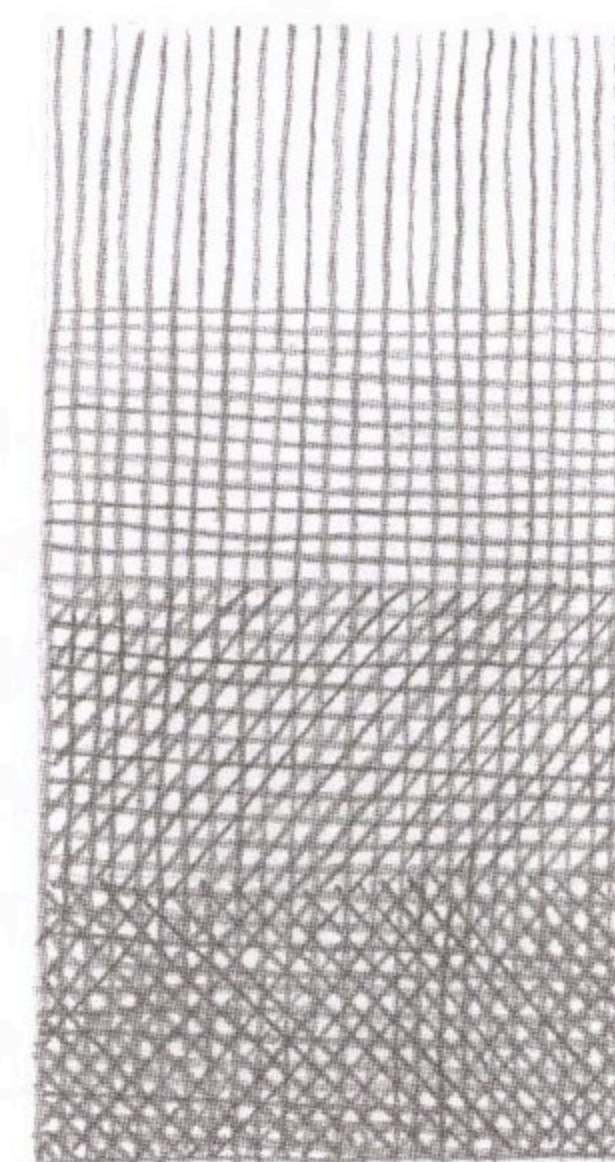

Fig. 14.59

In this diagram it can be seen that the building up of the four layers of hatching increases the tonal value.

Scribbling

Scribbling is the fastest of the shading techniques and offers great flexibility during sketching. It involves the use of multi-directional lines with the pencil being lifted from the paper only occasionally to change direction. It is a less rigid and less formal method of shading than the previous two methods we have looked at. The lines are varied to suit the style required. They may be continuous, straight, curved, jagged, wavy. The scribbling may be single-layered or many-layered. By drawing the lines close together a dense, dark tonal value may be achieved.

The surface texture may also be conveyed using this technique, as can pattern and the surface quality.
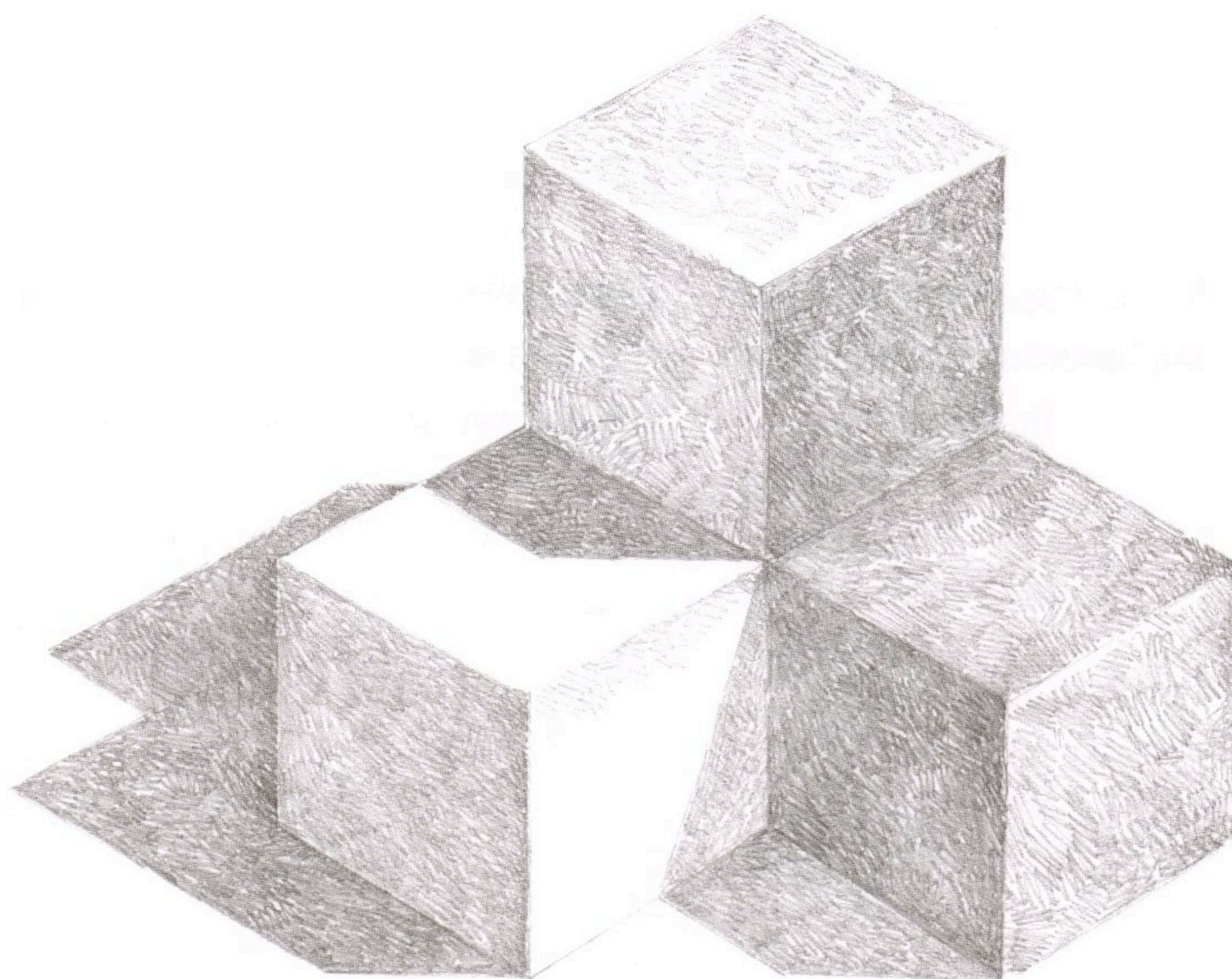

Fig. 14.60

Fig. 14.61

Scribbling as a shading technique is fast and effective.

Fig. 14.62

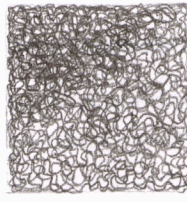**Different scribbling methods gives both tone and texture.**

Fig. 14.63

This scribbling technique relies on a completely freeform pattern.

Stippling

Stippling uses fine dots as a means of defining different tonal values. It is the slowest of the methods mentioned and requires good patience. Stippling relies on the density of the dots to determine the tone; closely packed dots will produce a dark tone while well-spaced dots will produce a light tone. The size of the dots used on an area will affect the apparent texture of that surface. By using small dots a fine texture is portrayed, while by using larger dots a coarse texture appears. If, however, the dots are drawn too large the stippling loses its effectiveness.

The shapes are first drawn very lightly. Dots are used over these lines to define the objects' edges. Areas to be shaded are then covered with an even distribution of dots. This will produce a light tonal value. By adding more layers of stippling darker tones are attained.
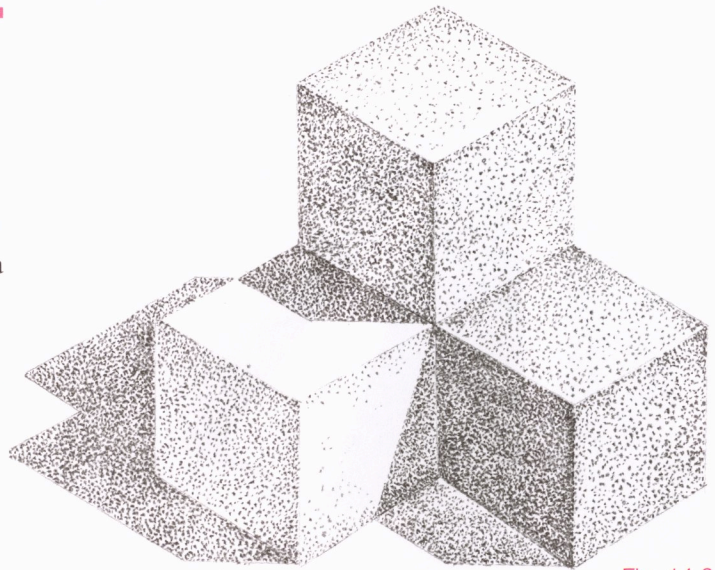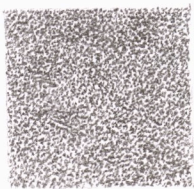

Fig. 14.64

Fig. 14.65

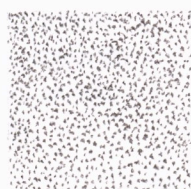**A dark tone with a fine texture is achieved by using small dots closely spaced.**

Fig. 14.66

A medium tone with a coarse texture is achieved by using larger dots with medium spacing.
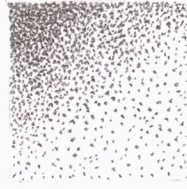

Fig. 14.67

Variation in tone across an area can be achieved by varying the dot spacing.
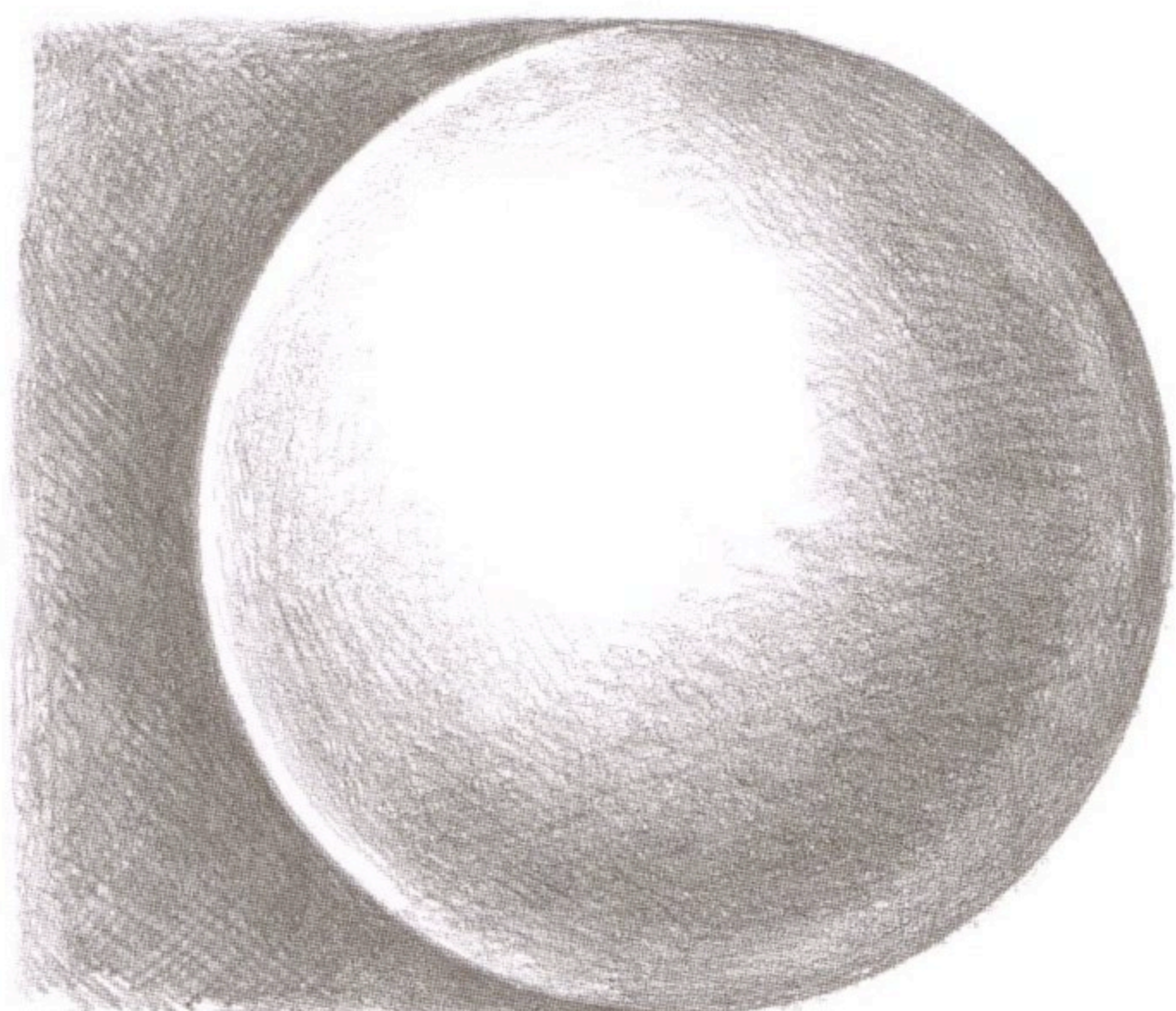
Modelling Form

Fig. 14.68

Modelling is the technique of making a two-dimensional drawing of an object or objects appear to have depth, volume and a relative position to each other in space. The two-dimensional drawing appears to gain three-dimensional status. This process is achieved by using shading and tonal values to transform a drawing of contours into **forms** in space.

The modelling of surfaces using light and shade can help us understand whether the surface is flat or curved or whether it is smooth or rough. Light patterns on curved surfaces such as cylinders, cones and spheres move gradually from light to dark. On planar solids such as cubes, prisms and pyramids there is a more abrupt change in shade/tonal value from plane to plane.

Gradual change from light to dark on the curved surface of the cylinder in comparison to an abrupt change from plane to plane on the pyramid.
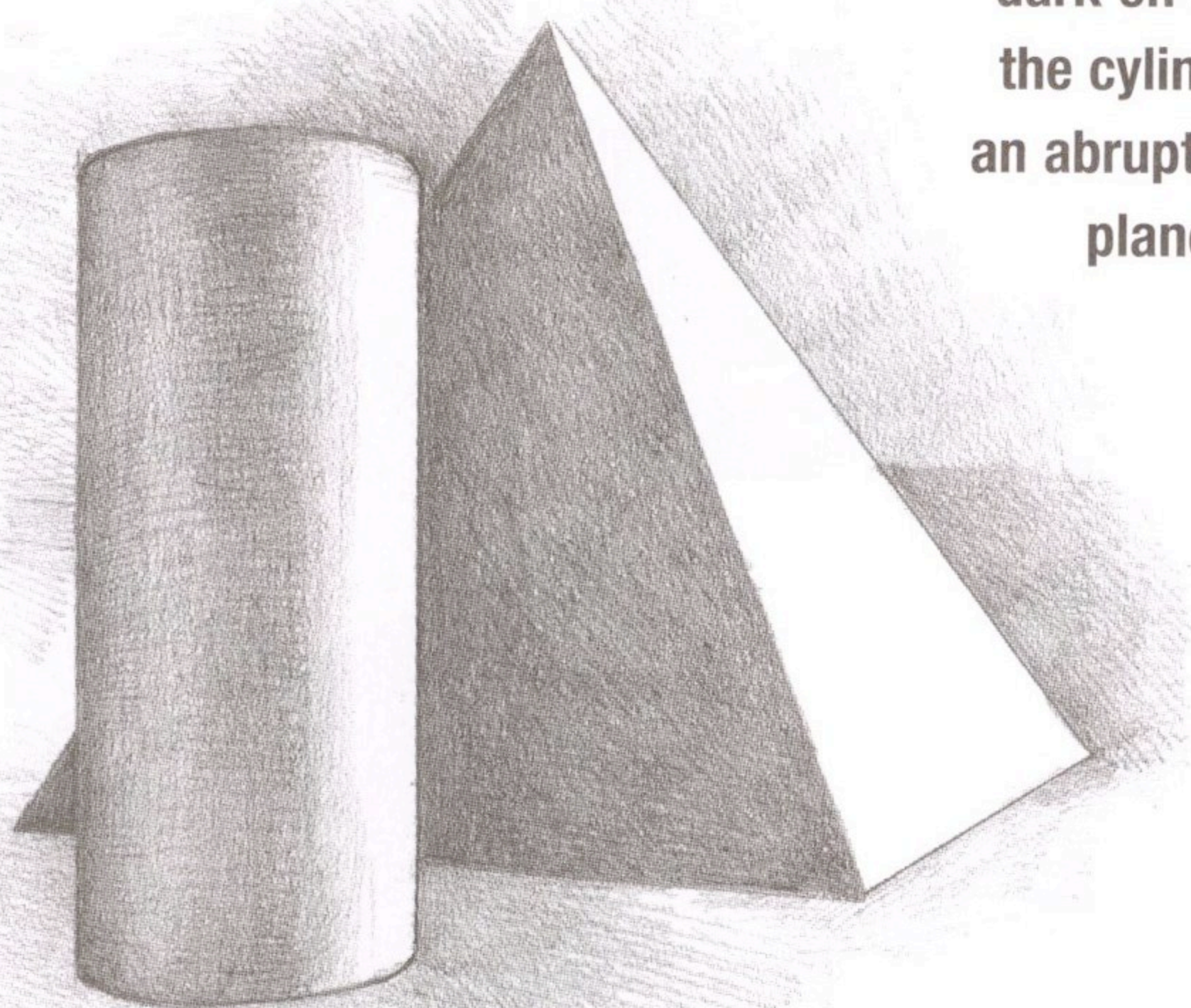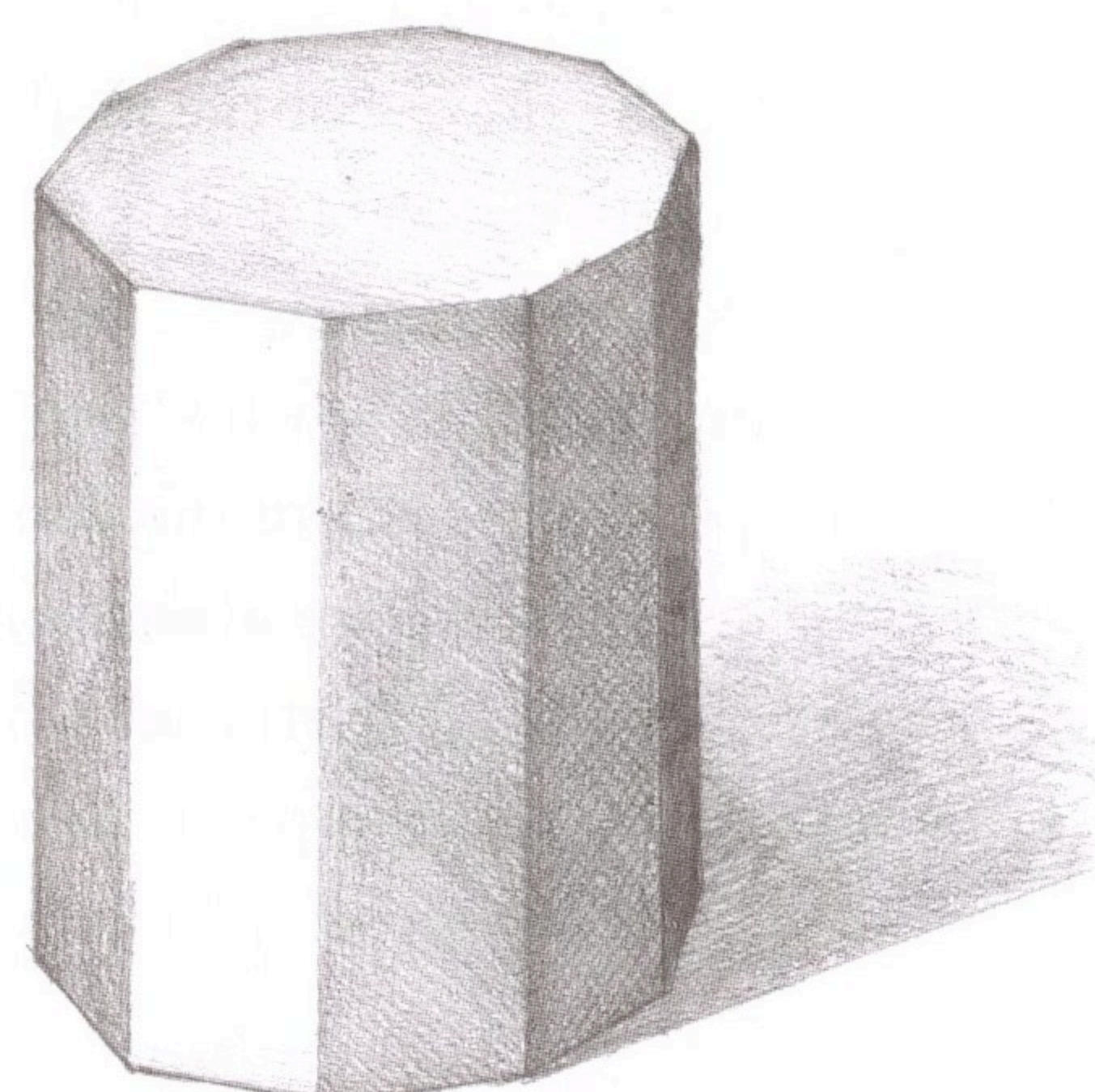

Fig. 14.69

Fig. 14.70

As the faces of an object turn away from the light their tonal value increases.
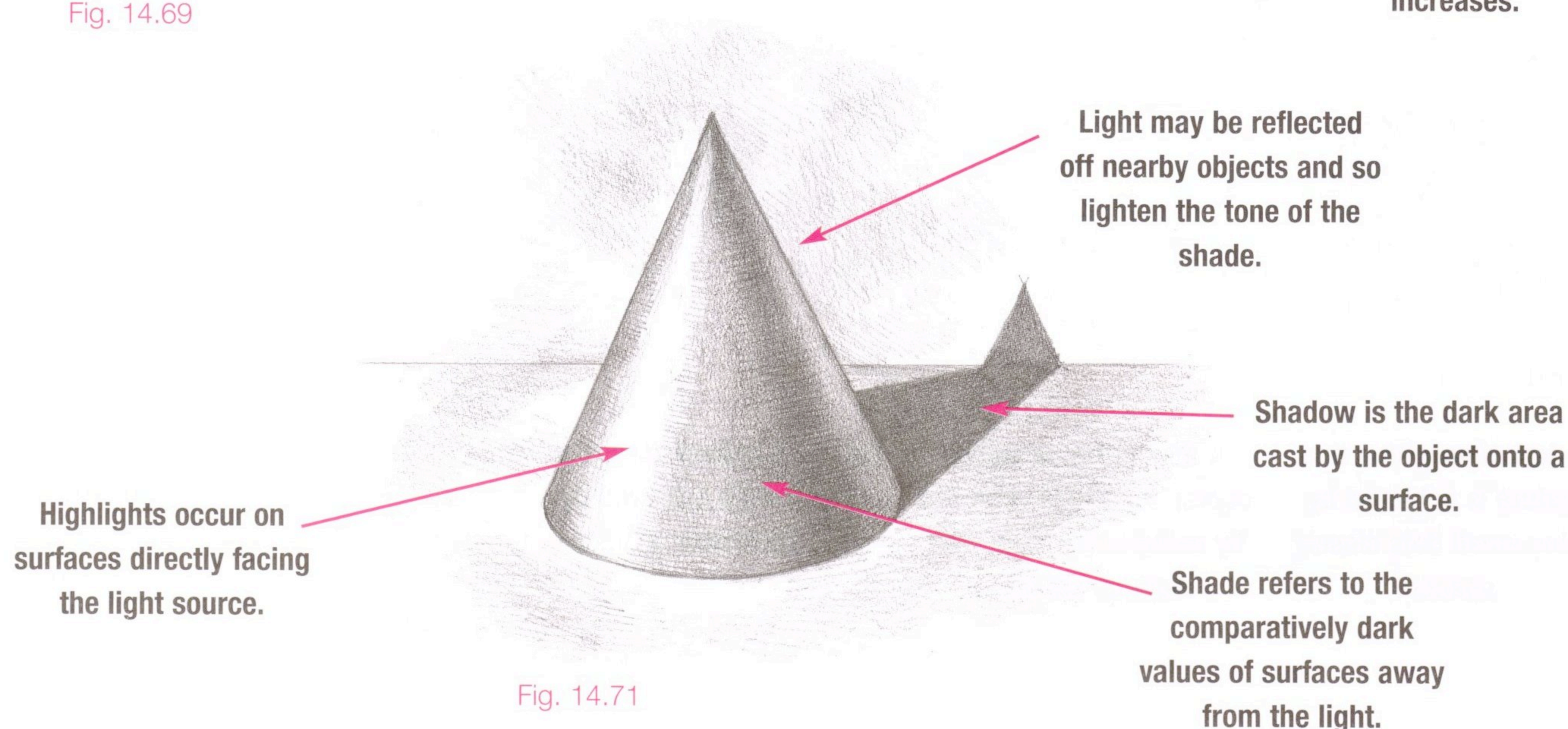

Light may be reflected off nearby objects and so lighten the tone of the shade.

Shadow is the dark area cast by the object onto a surface.

Highlights occur on surfaces directly facing the light source.

Shade refers to the comparatively dark values of surfaces away from the light.

Fig. 14.71