

UNIT 8. LIGHT AND VOLUME

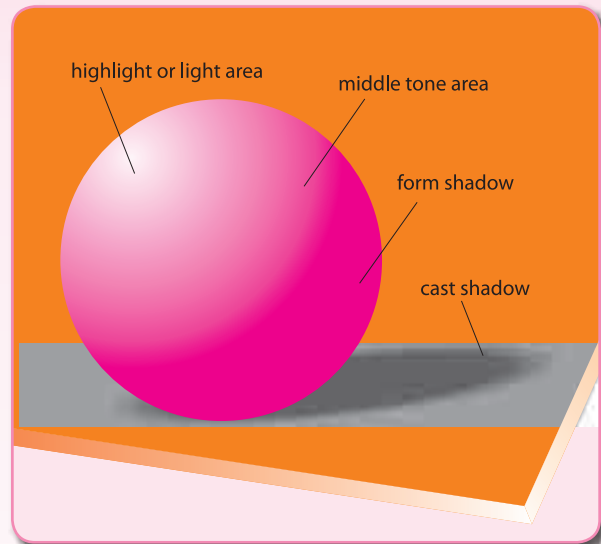
Light is a natural or artificial physical phenomenon that helps us to see and differentiate objects in the outside world. It also helps us to identify volumes and forms, define the size and position of things and see textures and colours.

THE DEFINITION AND REPRESENTATION OF VOLUME: SHADOWS AND CHIAROSCURO

Shadows are made by light. When a light source shines on an object, it casts shadows on the opposite side of the object.

All illuminated objects have the following areas:

- **Highlight or light area.** This is the area of the object that the light hits directly.
- **Middle tone area.** This is the part of the object not completely illuminated by the light source. It does not receive direct light so it is halfway between light and shade.
- **Form shadow.** This is the part of the object not illuminated. It is the shadow created on the surface of the object itself.
- **Cast shadow.** This is the shadow created by the object on other objects or surfaces (floor, walls...), or on parts of itself, when it casts its own shadow.



Chiaroscuro is the technique we use to materialise the three dimensions of an object or scene on to a flat surface by distributing the lights and shadows using different expressive resources.

The different intensities of the shadows create **chiaroscuro values**, which are progressive values that range from intense light to total darkness. When the light is **strong**, the outlines of the shadows are crisp and clear. When the light is **diffuse**, the shading looks similar and the outlines of the shadows are blurred.

We can use different techniques to create chiaroscuro. The most common ones are graphite pencils (thick and soft: 4B, 5B), charcoal, red chalk, coloured pencils and pen and ink techniques.

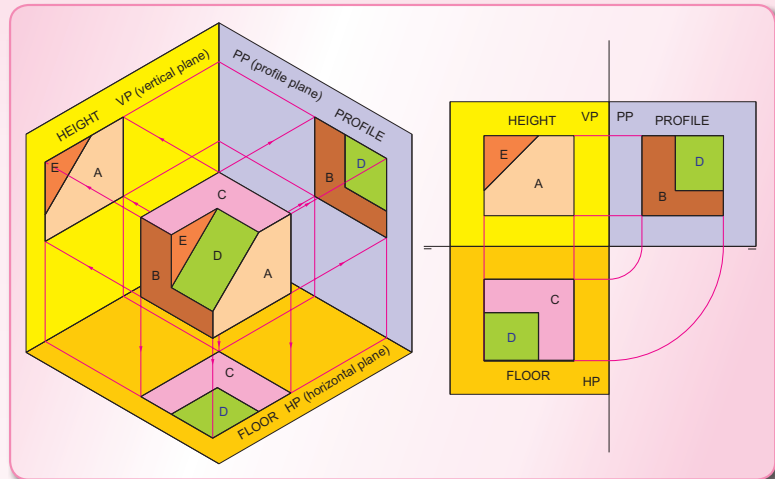


UNIT 9. SYSTEMS OF REPRESENTATION

Systems of representation are graphic languages that materialise and specify the biunique correspondence between three-dimensional and two-dimensional spaces. They are a very important part of descriptive geometry.

DIHEDRAL SYSTEM

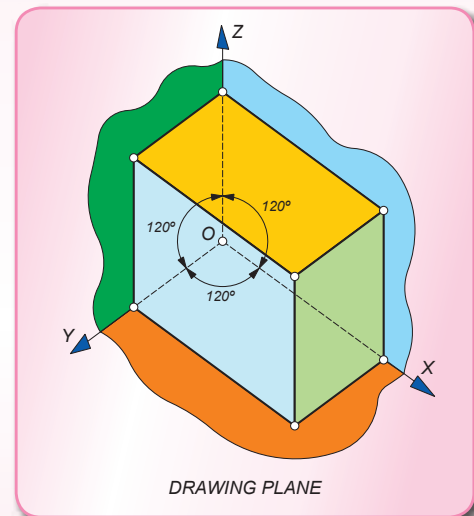
A geometric object is represented in the **dihedral system** when we have the projections (views) of all of the elements that define or configure it on the projection planes. These elements include points, lines and planes.



ISOMETRIC PROJECTION

In general, we use **perspectives** to represent three-dimensional objects in a single view or projection to obtain a clear vision of them.

The **isometric perspective** system has three planes that form a rectangular trihedron (XOY , YOZ and ZOX). These planes are projected on the drawing plane at the same angle.

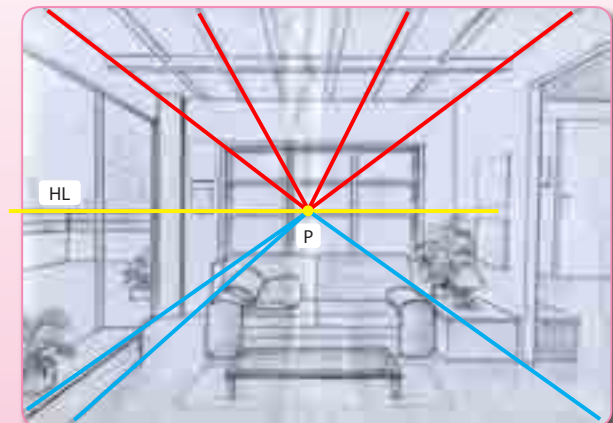


CONICAL PROJECTION

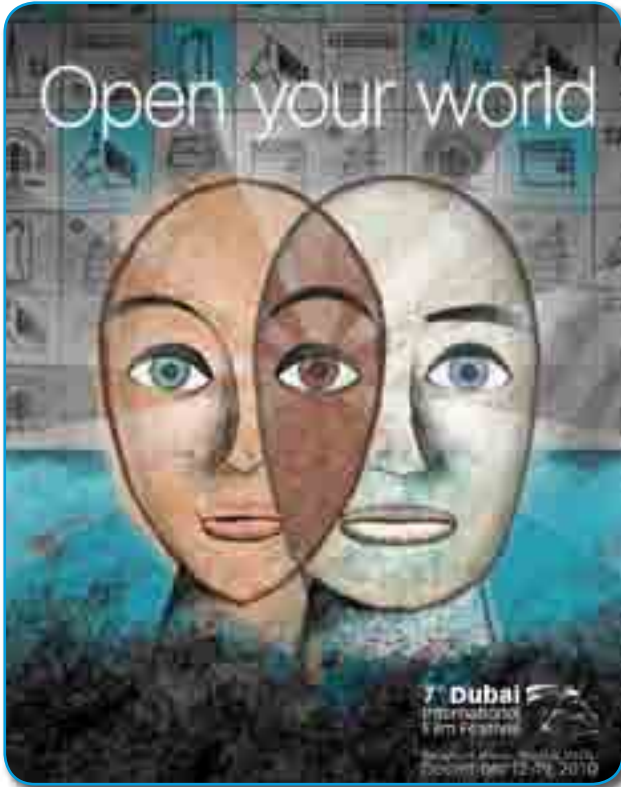
Conical projection is used to represent or draw reality as we see it or as we can capture it on a camera.

The first rule of perspective is that when we look at a group of parallel lines that are moving away from us and we try to draw them on a plane, we do not represent them as parallel lines. Instead, they must gradually come together until they meet at a single point called the **vanishing point**.

The image on the right (for furniture design) shows how we determine the **vanishing point (P)**, the **horizon line (HL)** and some **vanishing lines**.



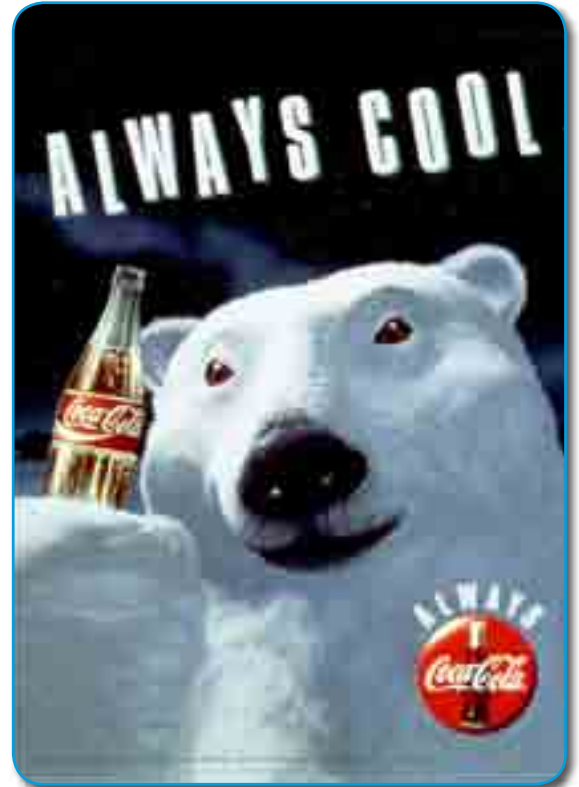
This activity shows four advertisements or posters. Study their advertising message (read over the theory in Unit 1 if you need to) and answer the questions underneath each one. Working in groups, find advertisements in magazines, publications, on television, etc. and discuss their design (power of the images, wording or text, colours...) and the use of stereotypes or the manipulation of the images.



Visual message

Forms of persuasion used

Procedures or techniques used



Visual message

Forms of persuasion used

Procedures or techniques used



Visual message

Forms of persuasion used

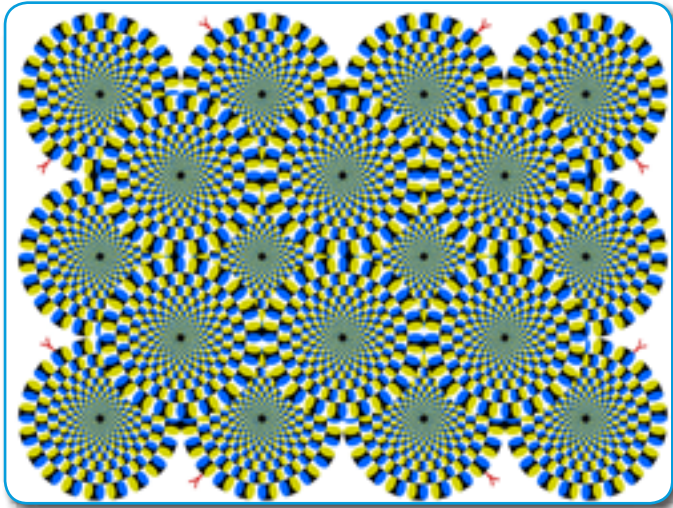
Procedures or techniques used



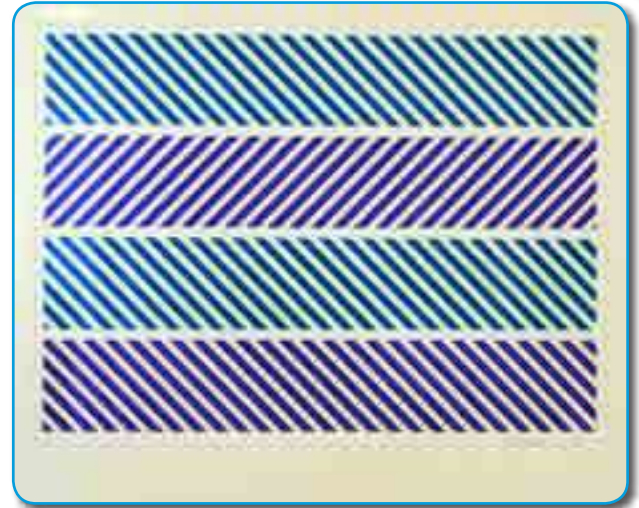
Visual message

Forms of persuasion used

Procedures or techniques used



Look closely at the full image for 20 seconds and describe the visual sensation that the circles cause.



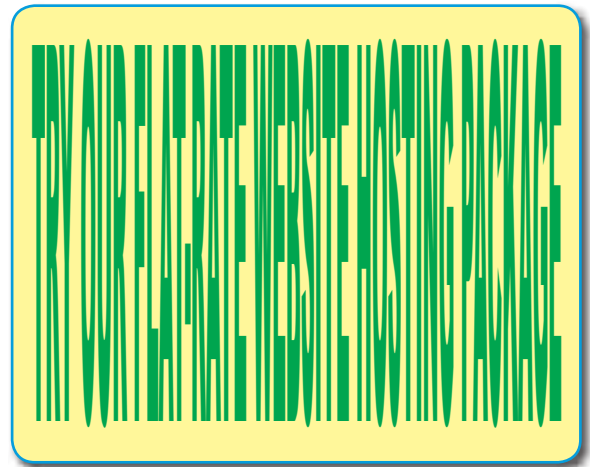
Are the coloured lines parallel?



Look closely at the image and describe the visual sensation that it produces.



Find the hidden image.



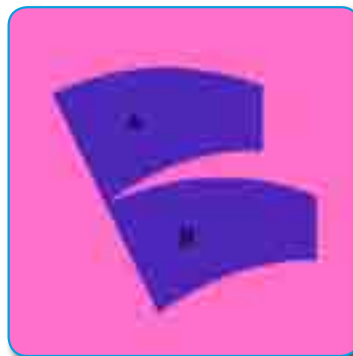
Find the hidden message.



Look at the arrangement of the figures in these images. Are they arranged from large to small?



What is the direction of the flow of water in this image? Is it possible?



Are shapes A and B the same size or do you think that one is bigger than the other?

Look closely at these images and say which of the points studied in the visual perception topic apply to each one: relationship between figure and background, law of good form (grouping by form, similarity...), visual trickery in size, distortion of parallelism, distortion in perception of depth and movement... Sketch on them with a pencil or marker pen and summarise what you find.