Fundamental Building blocks of a Picture

1.Story:
 Building blocks of plot, character, and dialogue

2.Sound:
Building blocks of dialogue, sound effects, and music

What is the 3rd block?

3. building blocks for all visuals are the basic visual components

The Basic Visual Components

space, line, shape, tone, color, movement, and rhythm

A visual component communicates moods, emotions, ideas, and most importantly, gives visual structure to the pictures.

We will discuss the basic visual components in relation to television, computer, and movie screens.

LINE AND SHAPE

TONE

COLOR

MOVEMENT

RHYTHM

Understanding and Controlling Visual Components

These are our cast of characters, the basic visual components: space, line, shape, tone, color, movement, and rhythm.

Visual structure is based on an understanding of the Principle of Contrast & Affinity.

What is contrast?

Contrast means difference ?
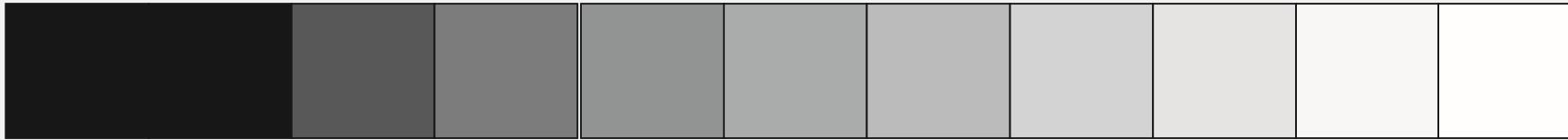
Tone refers to the brightness of objects. Tone can be organized using a grey scale. Contrast of tone means two shades of grey that are as different in terms of brightness as possible. The two grey tones with maximum contrast or difference are the black square and the white square. A picture illustrating maximum contrast of tone would use only black and white tones.

What is affinity?

Affinity means similarity.

Any grey tones next to each other on the grey scale have affinity. A picture illustrating maximum affinity of tone would use a limited portion of the grey scale.

Space

Space is a complex visual component. It not only defines the screen where all the other visual components are seen, but space itself has several subcomponents that must be explained.

Deep Space
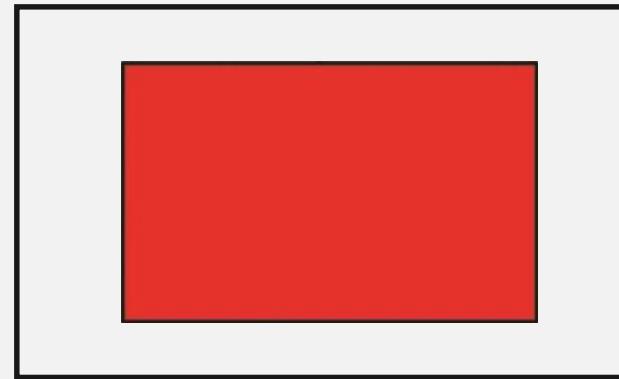
Deep space is the illusion of a three-dimensional world on a two-dimensional screen surface.

There is never real depth because the screen upon which the picture exists is only two-dimensional.
The audience believes they see depth on a two-dimensional screen because of depth cues.

Deep space, the illusion of depth on a two-dimensional surface, is created and controlled using the depth cues. Depth cues are visual elements that create the illusion of depth.

Films to watch :Touch of Evil (1958)
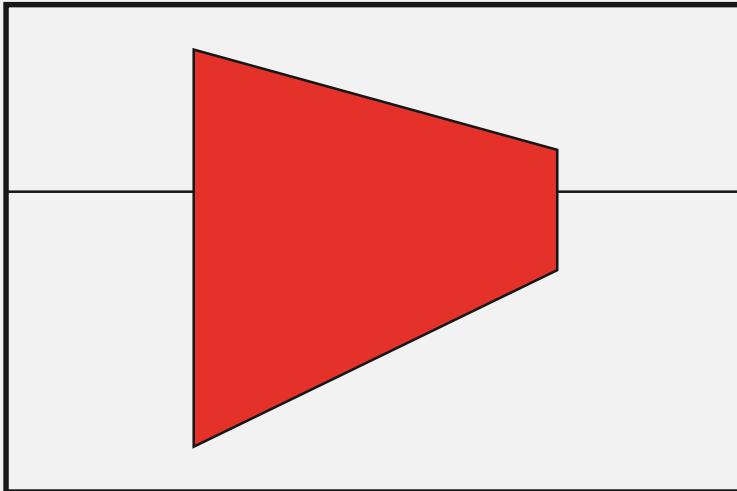
Deep space, the illusion of depth on a two-dimensional surface, is created and controlled using the depth cues. Depth cues are visual elements that create the illusion of depth.
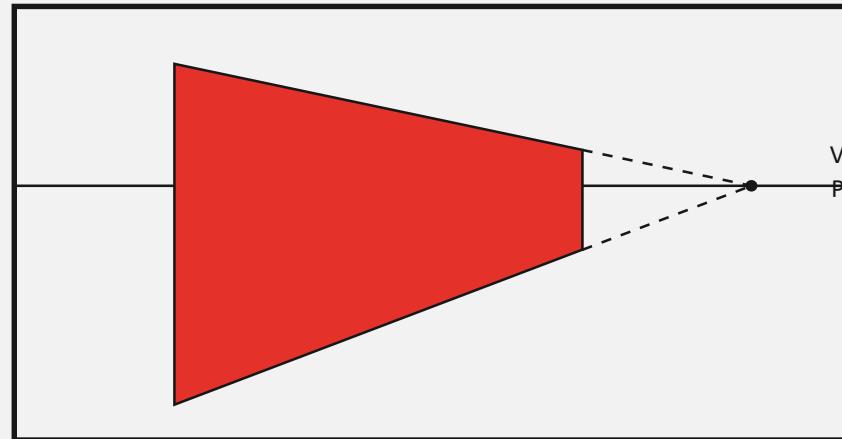

The plane's top and bottom lines are parallel and its left and right side lines are parallel. This is a frontal plane.

This is the simplest type of perspective.

Using the same wall, the viewer's position can be moved, revealing the depth cue of perspective.
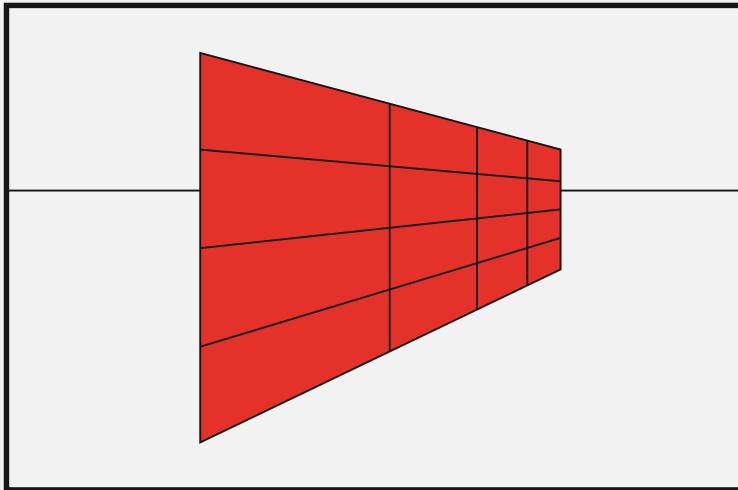

The lines along the top and bottom of the plane now appear to meet or converge at a single point called a vanishing point or VP.

Usually the vanishing point appears on the horizon, although it can appear anywhere. This creates a longitudinal plane, an extremely important cue to illusory depth. The longitudinal plane appears to have depth. One side of the plane looks farther away even though it exists on this flat paper surface.
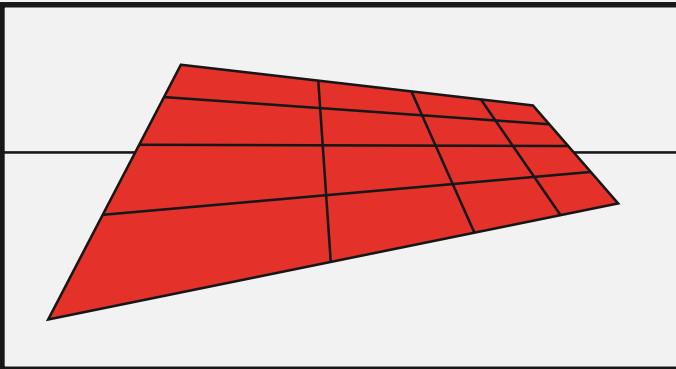
Two-Point Perspective

The next, more complex, level is two-point perspective, which uses two vanishing points. There are several ways that two-point perspective can be produced, shown here:

This longitudinal plane still has only one vanishing point. Additional lines have been added to the plane to make the convergence more obvious.
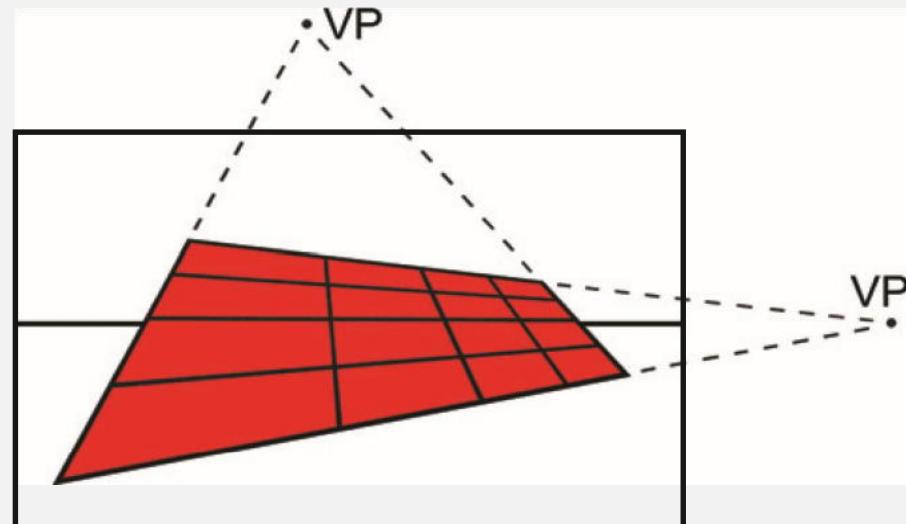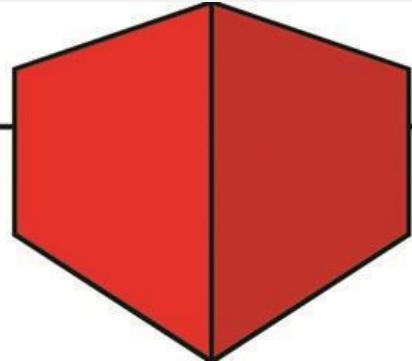
The longitudinal plane can be given a second vanishing point. If the viewing position is raised or lowered, the sides of the longitudinal plane no longer remain parallel.

There are two vanishing points. The plane's top and bottom lines converge to one vanishing point located to the left of the frame. The sides of the plane converge to a second vanishing point located above the frame.
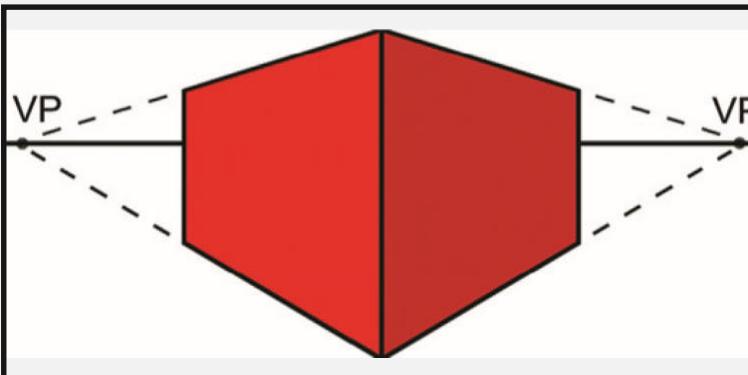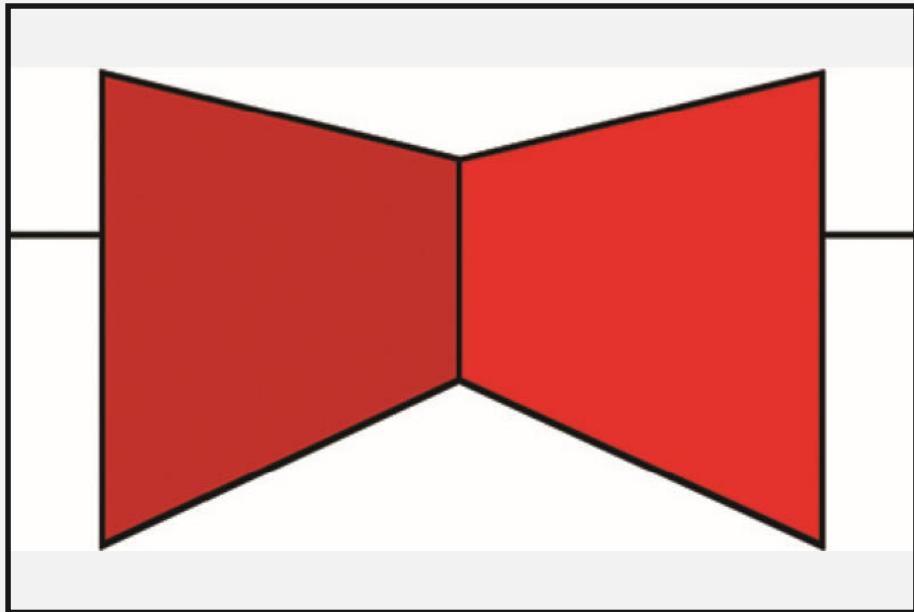
Two vanishing points can also be generated using two separate longitudinal surfaces.
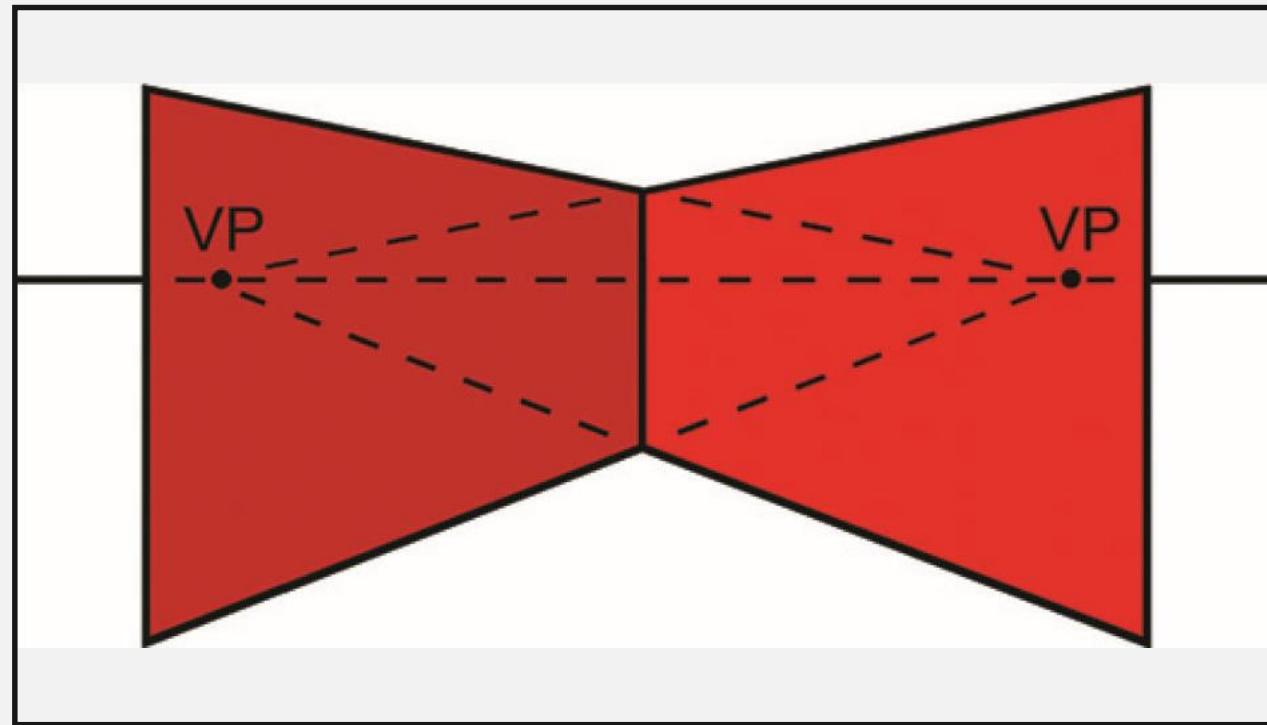

Commonly, this occurs at the corners of buildings. The top and bottom lines of each longitudinal plane converge to separate vanishing points.


VP   VP
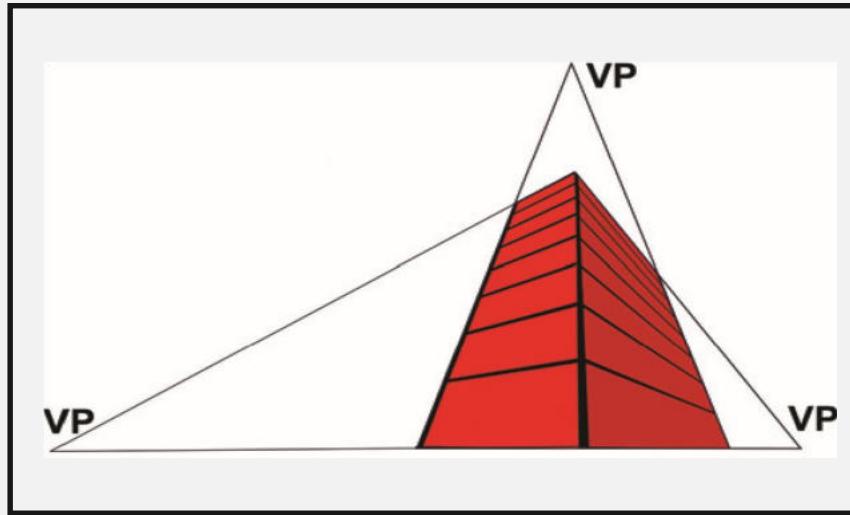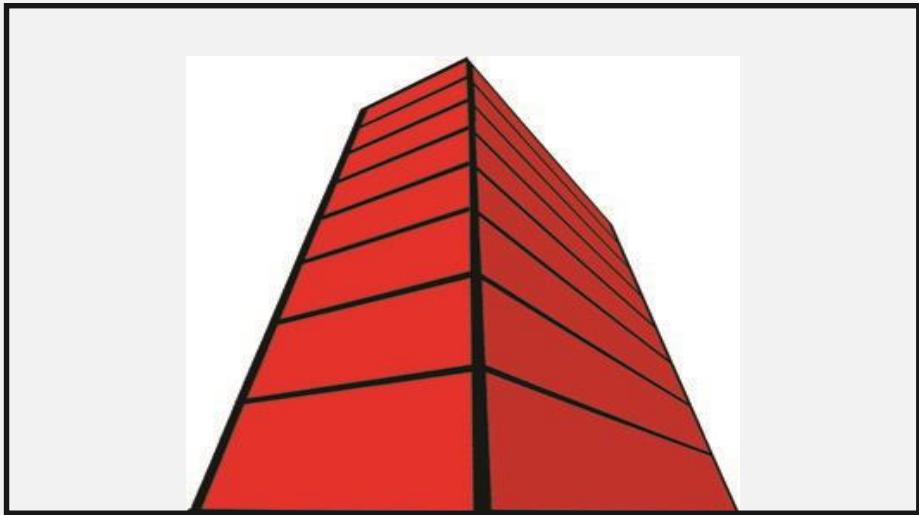
Inverting the two longitudinal planes reveals another example of two-point perspective.
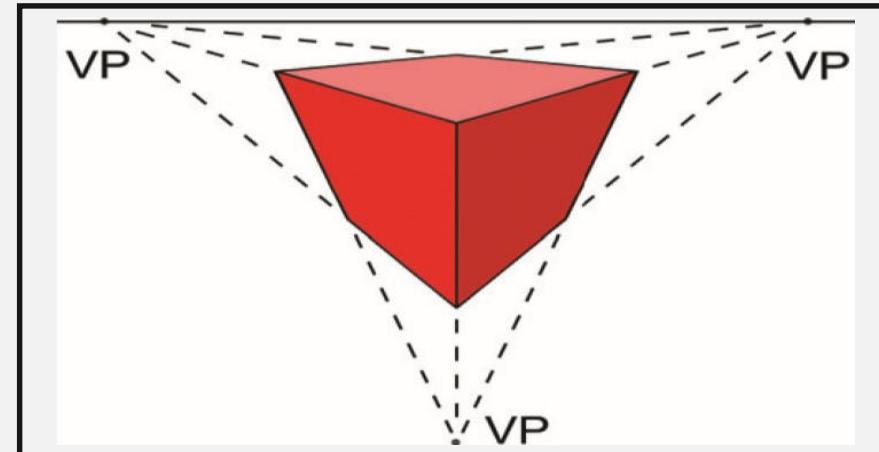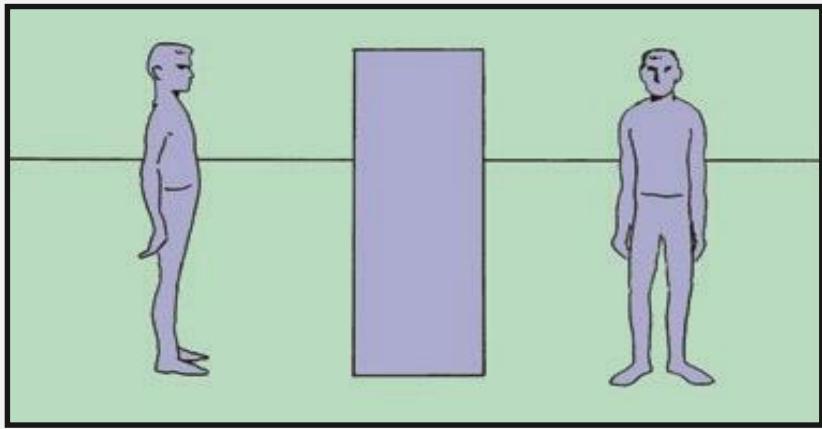
Three-Point Perspective

Three-point perspective is more complex than one- or two-point perspective.
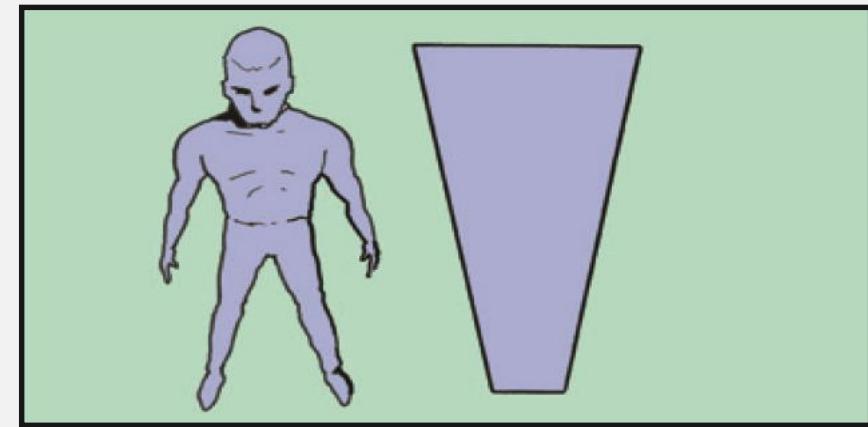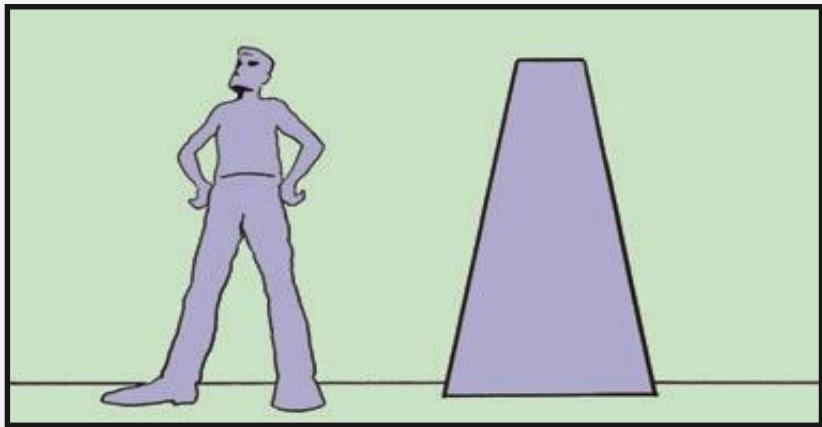

One vanishing point will appear above the building. The second and third vanishing points will appear along the horizon line to the building's left and right.
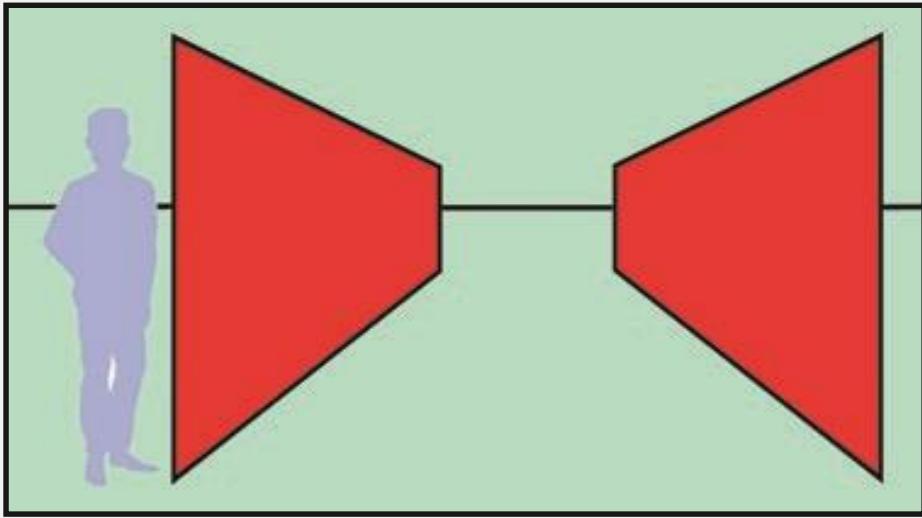
flat, frontal plane
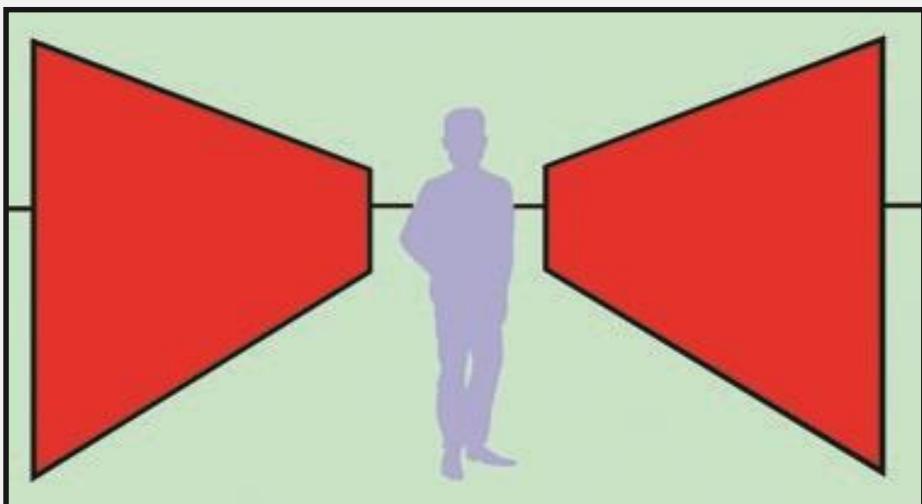
When the camera is lowered and tilted up, the actor becomes a longitudinal plane. This also occurs when the camera is raised and tilted down at the actor.

The audience's attention will usually be drawn to any on-screen vanishing point.

In this picture the viewer's attention is drawn to the actor, but it's also drawn to the vanishing point between the two walls.
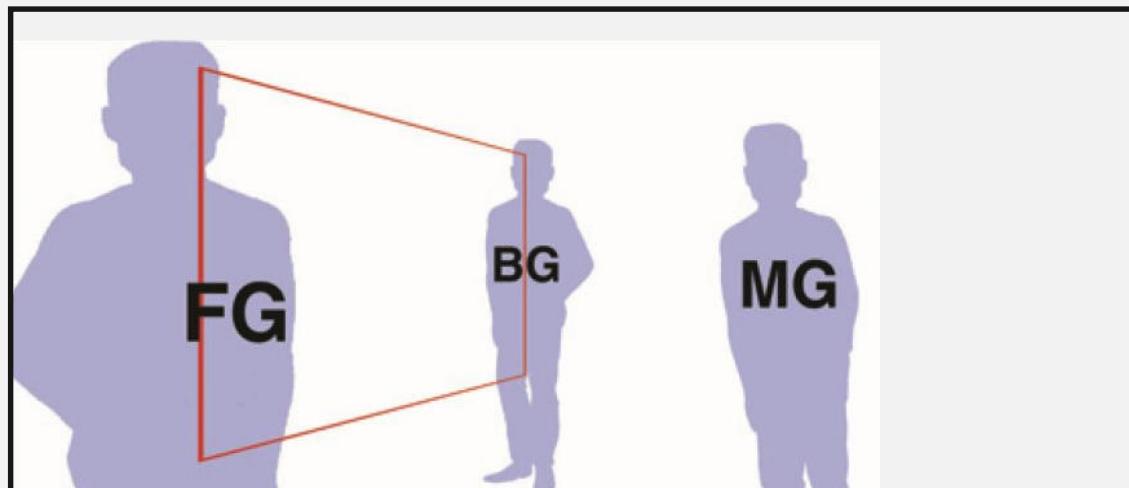
Size Difference

As an object of known size gets smaller, it appears farther away. As an object of known size gets larger, it appears closer.
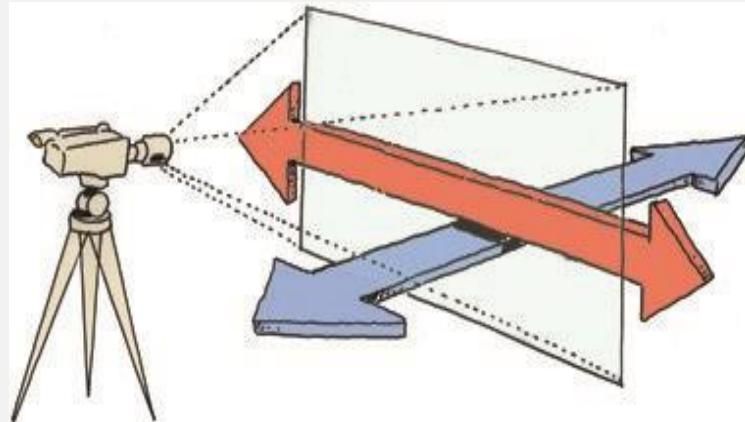
This shot has depth because the three people have been staged on three separate planes.

Object Movement
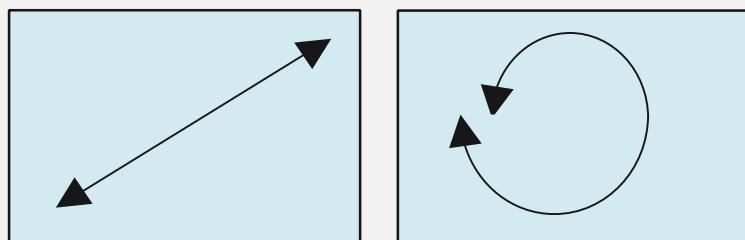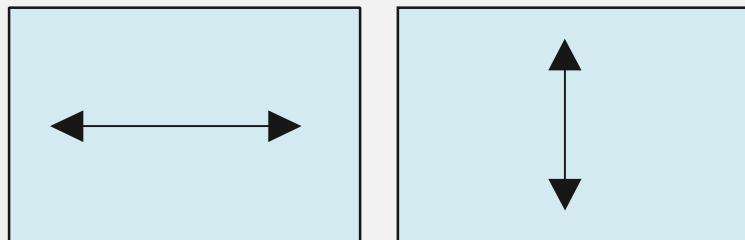
An object is anything in front of the camera: a person, an animal, a basketball, a chair, a car, a boat, a beam of light; it makes no difference.
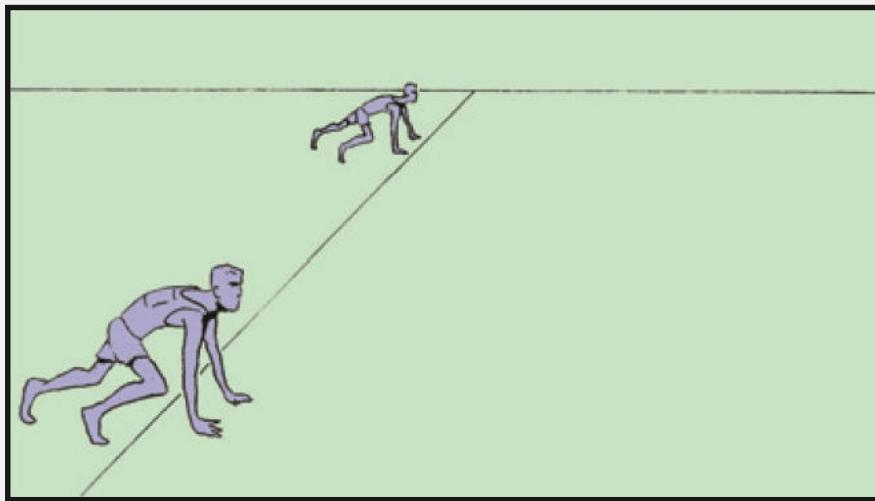
There are only two basic directions that an object in the real world can move in front of the camera. The object can either move *parallel* or *perpendicular* to the picture plane
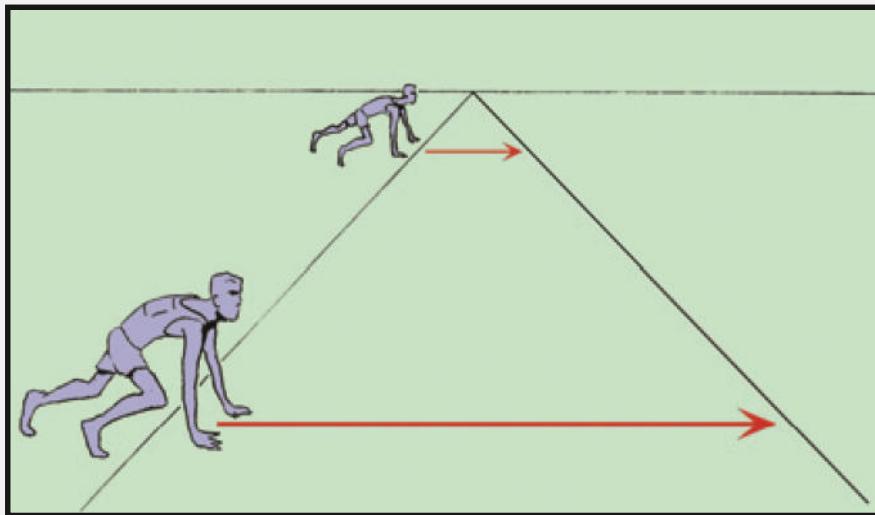
Movement parallel to the picture plane can be left-right, up-down, diagonal, or in a circular direction.

A single object moving parallel to the picture plane cannot create depth, but deep space is created on a flat screen surface when two or more objects in different planes move parallel to the picture plane.
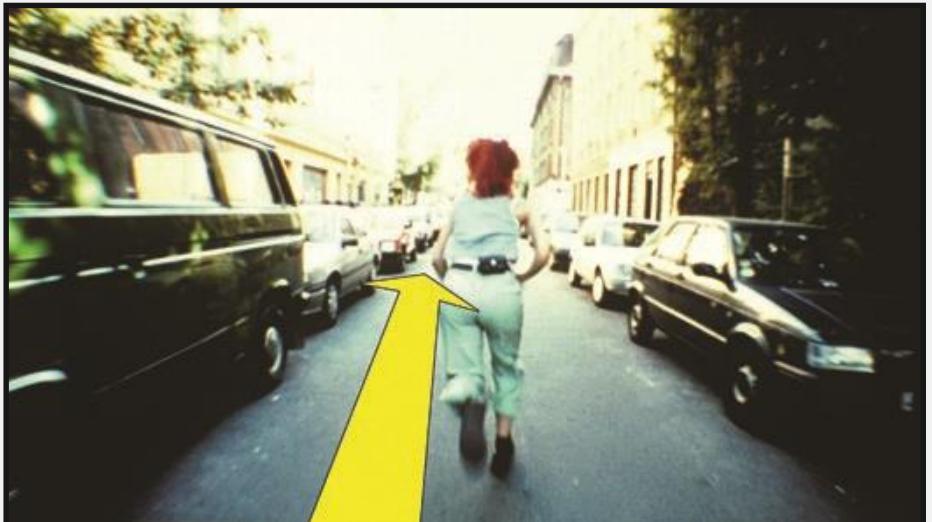
This example shows two track runners (one in the FG and one in the BG) at a starting line. Both runners will begin running at the same time parallel to the picture plane, and move at identical speeds. But the FG runner will appear to move across the picture plane faster than the BG runner, even though both runners actually travel the same distance.
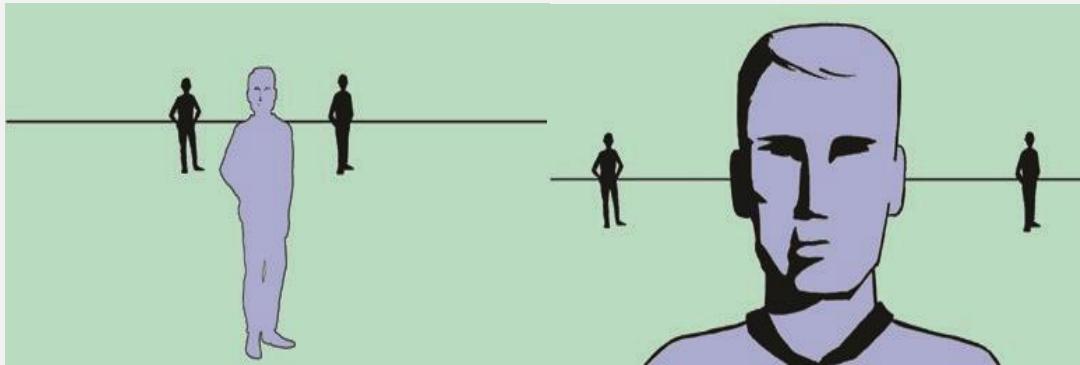
As an object moves at a constant speed toward the camera it appears to increase in speed. Conversely, as an object moves away from the camera it appears to slow down. This change in apparent speed is the depth cue produced by movement perpendicular to the picture plane. For example, as an airplane taxis down a runway and takes off, it actually gains speed, but it appears to slow down as it flies away into the distance.

Camera Movement
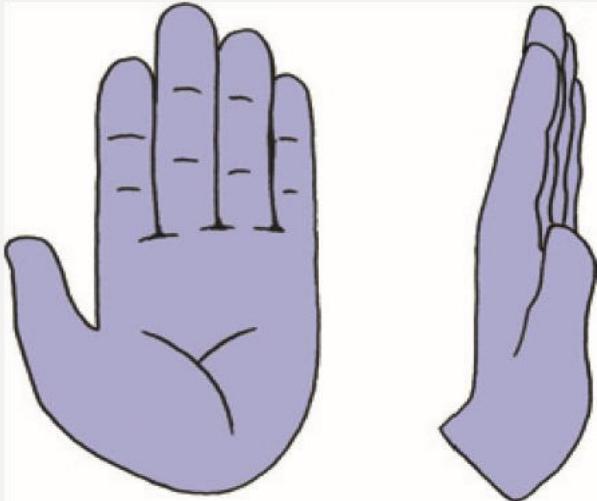
There are three camera moves that create relative movement and illusory depth. These moves are the dolly in/out, the track left/right, and the boom up/down. It doesn't matter how the camera is being moved (by dolly, crane, car, helicopter, special mechanical rigs, or simply hand-held)—the same basic principles apply.

As the camera dollies in, the FG actor will get larger faster than the two actors in the BG. This is due to the relative distances of the FG and BG actors from the camera.

Shape Change

An object's shape change is perceived as a cue to illusory depth. Shape change can occur on moving objects or stationary (nonmoving) objects.

A cup, for example, changes shape as it turns or as the camera moves around it. From table height, it appears as a rectangle but when viewed from above it's a circle.

Tonal Separation

Tone refers to black and white and the gray scale. The gray scale contains no color. It's a series of tonal steps from black to white

Even with two objects of identical size, a viewer will usually see the brighter object as closer and the darker object as farther away .

Color Separation
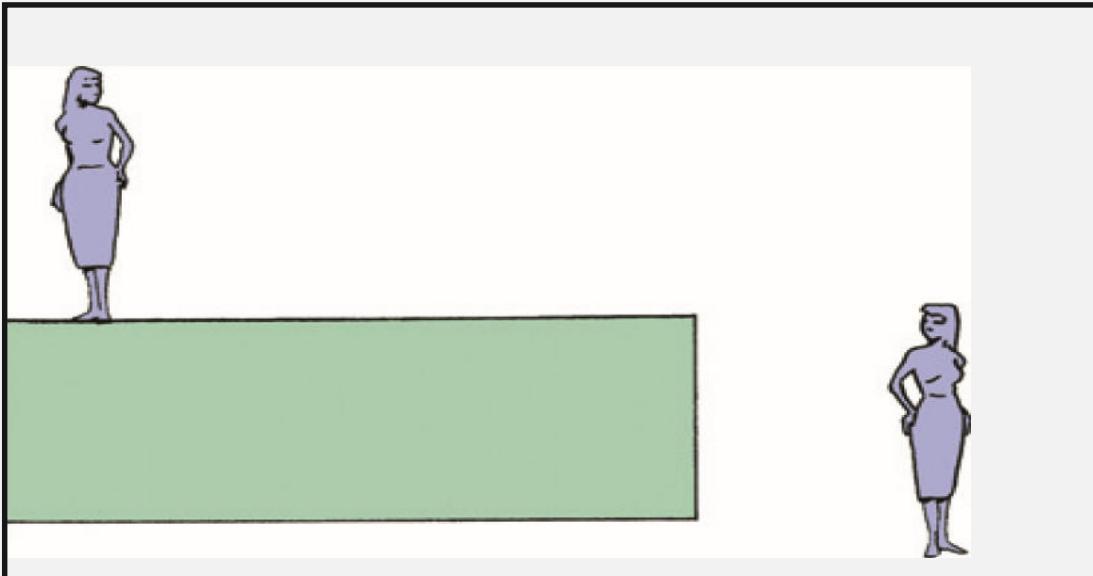
Colors can be used as a depth cue by classifying them into warm and cool groups. The warm colors are red, orange, and yellow, and the cool colors are blue and green. "Color," elaborates on this list and explains the complexities of color more fully.

Warm colors usually seem closer to the viewer and cool colors appear farther away.

Up/Down Position
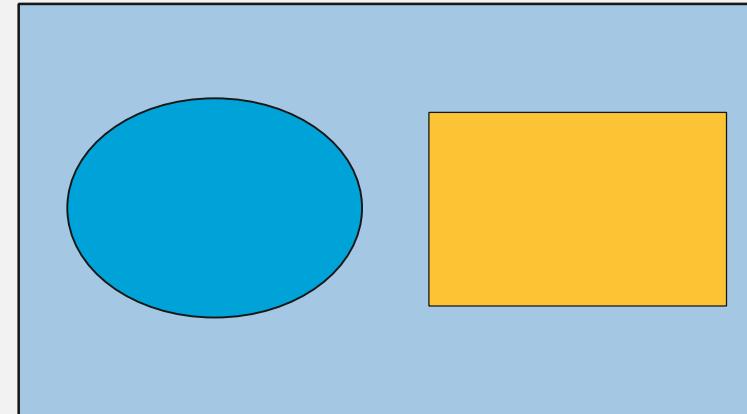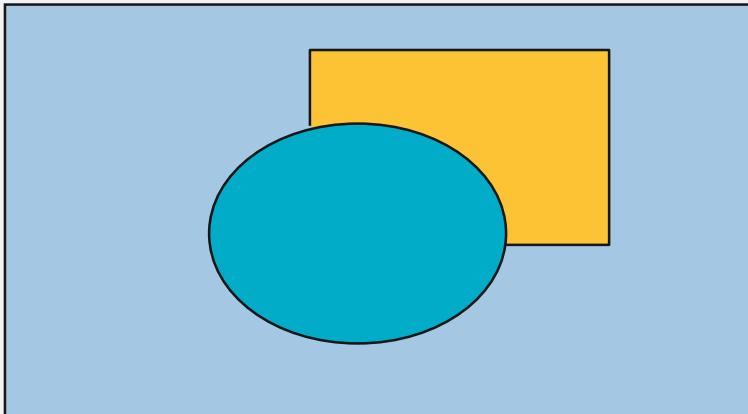
The vertical location of objects in the frame affects their apparent distance from the viewer. Objects higher in the frame appear farther away, and objects lower in the frame seem closer.

Even though these two people are the same size, a viewer will perceive the person lower in the frame to be more in the FG.

Overlap

When one object overlaps another, illusory depth is created.

The overlapping objects create more depth than the objects without overlap. In most cases, overlap is a minor depth cue. The overlapping objects must display other major depth cues before the actual overlap adds much illusory depth.

Focus

Focus refers to the sharpness of objects in a picture.

As a depth cue goes out of focus, it loses its deep space characteristics and becomes flat or limited space
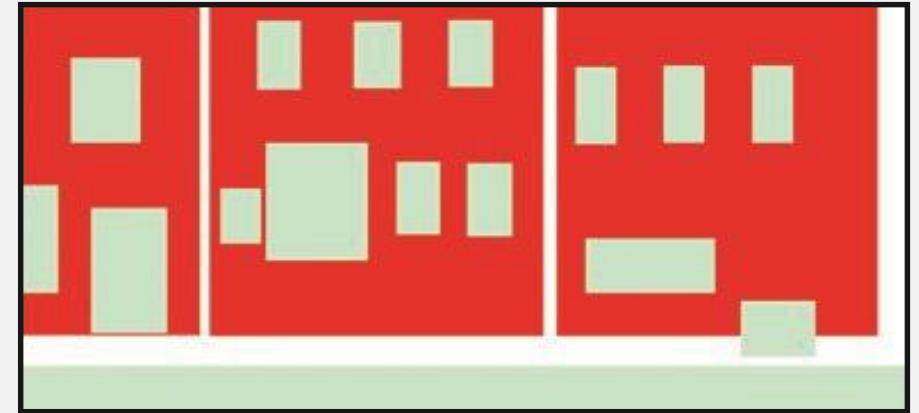
Frontal Planes

Perspective, converging lines, and vanishing points must be eliminated in flat space.

Planes must be frontal, not longitudinal

The frontal plane emphasizes the two-dimensionality of the screen surface
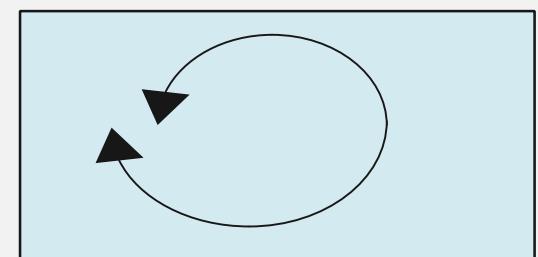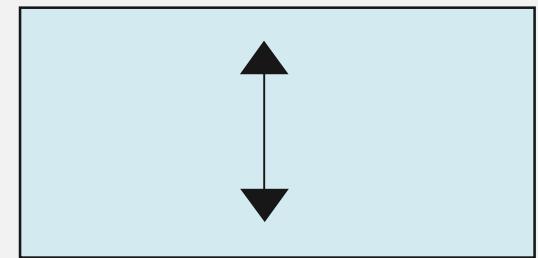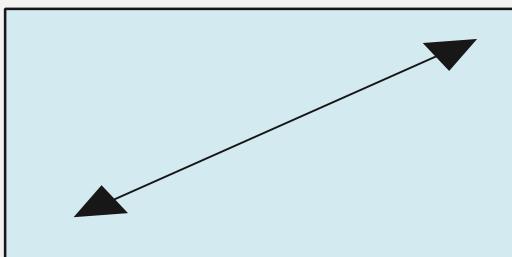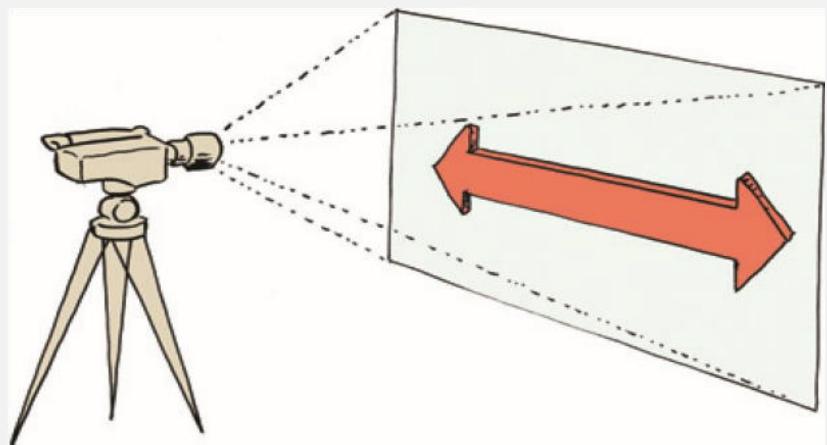
Size Constancy
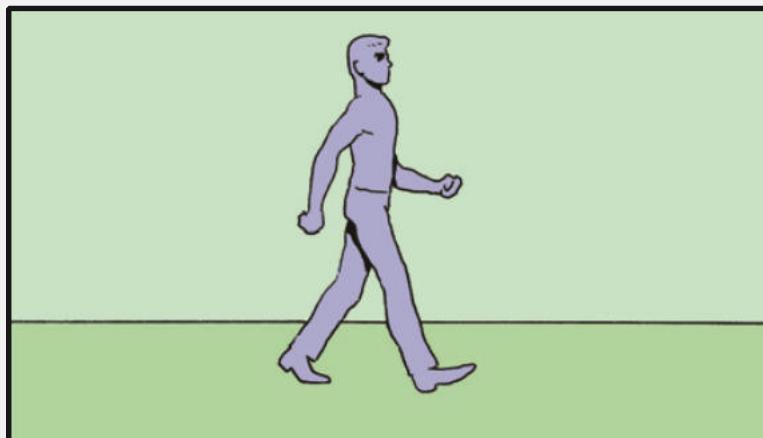
To emphasize the flatness or two-dimensionality of the screen, all similarly sized objects should be kept the same size and staged on the same frontal plane.

Object Movement
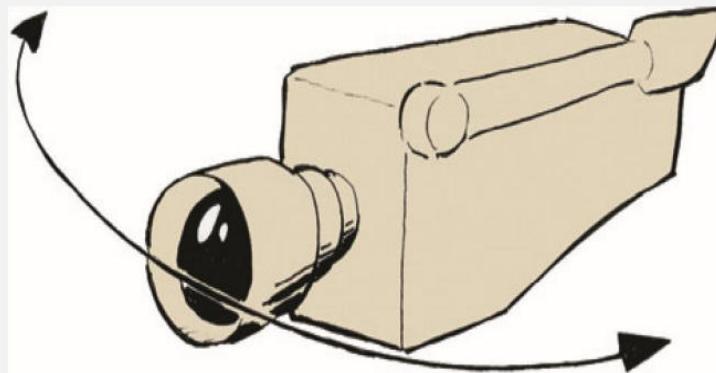
In flat space, objects move parallel to the picture plane.

Camera Movement
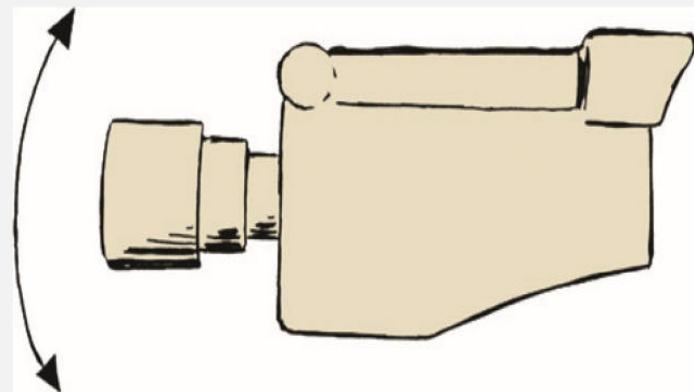
There are three camera moves that maintain flat space because they do not create relative movement:

the pan, the tilt, and the zoom.

The camera pan creates flat space
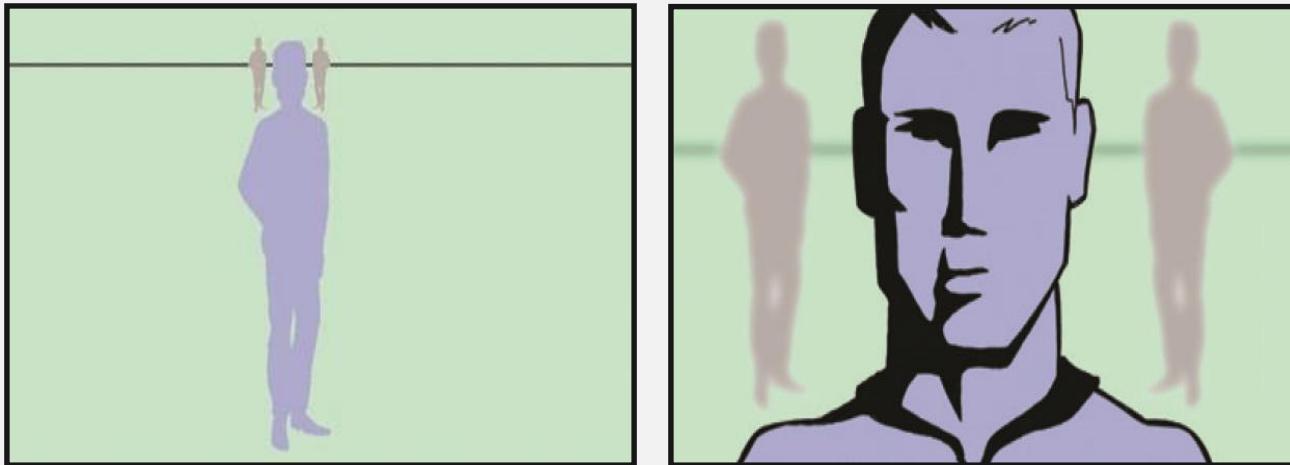
When the camera pans, all objects in the frame keep their relative positions to one another

The tilt is the second flat space camera move.

Tilting moves the camera on a vertical axis. There is no relative movement created with a tilt

the zoom

A zoom is not really a camera move, but it is the flat space equivalent of the deep space dolly

A zoom creates flat space for a number of reasons. Most importantly, the camera is not physically moving, so there will be no relative movement. A zoom-in enlarges everything in the frame at exactly the same rate of speed

The FG, MG, and BG grow larger in unison as if everything in the picture existed on a single, flat plane.

Relative movement is eradicated

A zoom-in also alters the focal length of the lens, changing it from a wider angle to a telephoto lens

Textural Diffusion

Objects without texture look farther away, and heavily textured objects appear closer. To achieve flat space, avoid these differences because it creates depth.

Maintaining flat space by manipulating FG and BG texture is difficult, but avoiding heavily textured FG objects can aid in maintaining flat space.
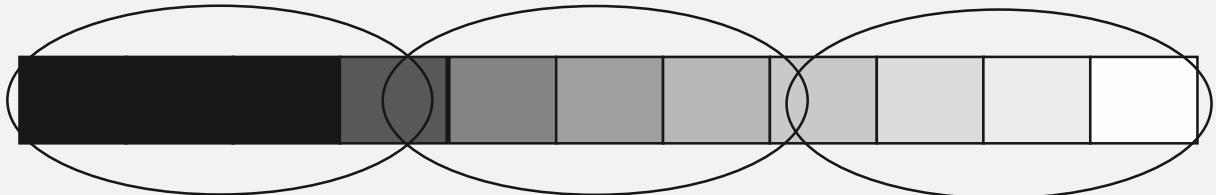
Normally, objects with more textural detail appear closer. If BG objects are given more textural detail, they tend to move forward or advance into the FG. FG objects that lack textural detail will tend to recede into the BG.

Tonal Separation

Tone refers to the grey scale. Maintaining flat space requires a reduction of the grey scale range within the picture. Remember, brighter objects usually appear closer and darker objects seem farther away.

The depth cue of tonal separation suggests that brighter objects appear closer and darker objects appear farther away. Reversing this rule by placing brighter objects in the BG and darker objects in the FG flattens the space.

The brighter BG objects will visually advance and the darker FG objects will recede. When the FG recedes and the BG advances, the space flattens.

Color Separation

The warm/cool color range must be reduced to maintain flat space.

Since cool colors (green and blue) recede and warm colors (red, orange, and yellow) advance, flat space can be emphasized by reducing color to only warm or only cool colors.

As a depth cue, warmer colors advance and cooler colors recede. Placing warmer colors in the BG and cooler colors in the FG can flatten space. The warmer colors in the BG will advance, bringing the BG plane forward, and the cooler FG colors will recede, pushing the FG into the BG. The FG and BG planes will appear to merge rather than separate.

Up/Down Position

The position of objects relative to the frame can help create flat space.

Keeping all the objects on the same frontal plane maintains flat space.

Since larger objects appear closer and smaller objects seem farther away, the depth cue can be reversed. If larger objects are placed in the BG and smaller objects in the FG, the space of the picture will flatten.

Overlap

Ideally, in flat space, objects should not overlap, because overlap suggests depth. Completely removing overlap in the creation of flat space is impossible, because every shot has a background and any object appearing in front of that background produces overlap. Overlap can be reduced with a careful arrangement and staging of objects in the frame, but its elimination is impossible.

Focus

Once any object is out of focus, it becomes flat. It doesn't matter if the object is in the FG, MG, or BG, it flattens when it becomes blurred. . FG, MG, and BG objects will often blend into one flat plane when they are out of focus. Occasionally, the out-of-focus plane will read as a flat BG plane.

Limited Space

Limited space is a specific combination of deep and flat space cues. Limited space uses all the depth cues except two:

Longitudinal planes. The deep space longitudinal planes are replaced with flat frontal planes.

Object movement perpendicular to the picture plane. Movement toward or away from the camera must be reduced or eliminated. Objects should move only parallel to the picture plane.
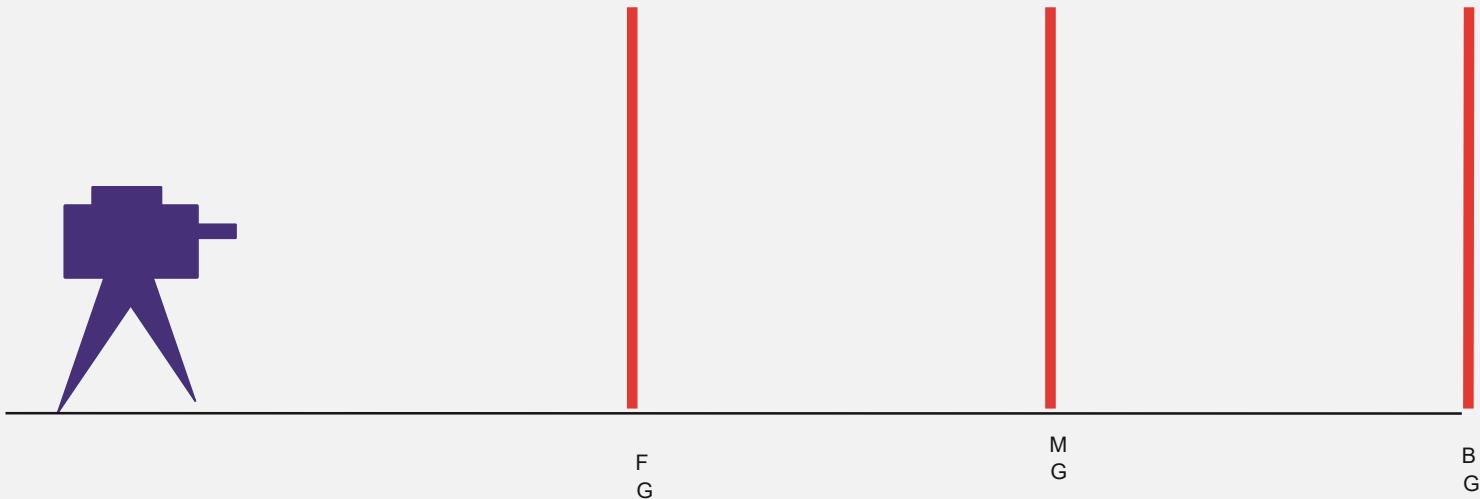
Limited space requires physical and visual separation between the frontal planes. There's a great difference between physical separation and visual separation. Limited space requires both. Two objects may be extremely far apart physically but when seen through a camera, they may appear close together.

In this picture there is a clear visual separation between the MG and the BG because of the depth cues.

In this version of the same shot, the BG actor and the depth cues have been removed. The BG wall is no longer visually separated from the MG. This picture is not limited, it has become flat.

The quality of limited space is similar to looking through a series of visually well-separated FG, MG, and BG sheets of glass. If the glass sheets appear too close together, it produces flat space. If the glass sheets are visually well separated, limited space is produced.

Ambiguous Space

Ambiguous space occurs when the viewer is unable to understand the actual size or spatial relationships of objects in the picture.

Most pictures are not ambiguous. Usually pictures contain visual information that reveals the subject, the actual size of objects, and the camera's location in relation to the subject. This kind of picture creates recognizable space.

Objects of unknown size or shape. The actual size relationship between objects can be purposefully manipulated to trick the viewer. Size relationships between unfamiliar objects can create confusion.

Lack of movement. Sometimes objects must move before a viewer can understand the object and its surrounding space.

Tonal and texture patterns (camouflage).

Space can become impossible to define because the deep or flat space cues are disguised.

Mirrors and reflections.

Multiple images can disorient the viewer, making it difficult to understand the location of objects in an environment.

Comparing the Four Space Types

The first version uses deep space. The picture still exists on a two-dimensional surface but it has an illusion of depth. There are several longitudinal planes, one-point perspective, shape change, size difference, textural diffusion, color separation, tonal separation, and up/down position. The camera will crane down and dolly in as the FG actor walks perpendicular to the picture plane.

This is flat space. The walls are frontal, and there are no longitudinal planes or converging lines. The actors are staged on the same horizontal plane; they're the same size, they have the same amount of textural detail, and any movement will be parallel to the picture plane. The camera will zoom or dolly parallel to the frontal wall plane.

This third version is limited space. The depth cues in this shot include size change, textural diffusion, up/down position and tonal separation, but there are no longitudinal planes, only frontal surfaces. Eliminating longitudinal surfaces is critical to creating limited space.

In the fourth version, the picture illustrates ambiguous space. The lights are off in the hall, some stray light illuminates the stairs, and the two actors are somewhere in the dark. The picture is ambiguous because it's impossible to tell the actual size and spatial relationships in the shot..

Controlling Space During Production

Creating Deep Space

1. **Emphasize longitudinal planes**. Any wall, floor, or ceiling can create a longitudinal plane. Keep frontal planes out of the shot because they're flat. Including longitudinal planes is the most important way to create deep space.

2. **Stage objects perpendicular to the picture plane** (toward or away from the camera). This is commonly called *staging in depth*. Arrange the objects emphasizing size change. Objects in the FG should be larger and objects in the BG should be much smaller. Keep movement perpendicular to the picture plane to emphasize size change, textural diffusion change, and movement in depth.

3. **Move the camera**. Get a dolly, a crane, or hand-hold the camera but keep it moving as much as possible. Be sure to motivate the camera moves by linking them to object movement or dramatic purpose. Dollying in and out, tracking left and right, and craning up and down create relative movement.

4. **Take advantage of tonal separation**. Light scenes with more tonal contrast. Make objects in the FG brighter than objects in the BG.

5. **Use a wide angle lens**. A wide angle lens has a wider field of view and a greater ability to include more depth cues in the picture. Wide angle lenses also have a greater depth of field than other lenses. Depth of field refers to the area in front of the lens that is in acceptably sharp focus. Objects must be in focus if they're going to be used as depth cues.

Creating Flat Space

1. **Eliminate perspective**. Remove all longitudinal planes and emphasize frontal planes.

2. **Stage objects parallel to the picture plane**. Keep the objects in the picture on a single, frontal plane so that they remain the same size. Keep movement parallel to the picture plane (this is sometimes called *flat staging*). If objects move perpendicular to the picture plane, use telephoto lenses to minimize the depth cues.

3. **Remove relative movement**. Don't use a dolly or crane for camera movement unless the dolly moves parallel to frontal planes. A tripod and a zoom lens may be all you need because the camera should tilt and pan only to maintain flat space. Zooming will keep the space flat but if you hate the zoom lens, don't use one.

4. **Reduce tonal/color separation**. It will be important to reduce tonal contrast and condense the grey scale. The production designer should reduce the tonal range of the set to one third of the grey scale. Color should be limited to all warm or all cool colors. Reversing the depth cue of color and tonal separation can further enhance the flat space.

5. **Use telephoto lenses**. A longer, telephoto lens excludes depth cues because of the lens's narrow field of view. The longer lens will require objects to be staged farther away from the camera, eliminating the depth cues of size difference and textural diffusion

6. **Let objects blur**. A shallow depth of field will allow the backgrounds to go out of focus. Blurred objects eliminate depth and emphasize flat space.