|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SPACE PART 2 - PERSPECTIVE

|  |  |  |
| --- | --- | --- |
|   | Perspective allows an artist to control the illusion of depth in an image with space ranging from a few inches to many miles. Linear and atmospheric perspective must be used together to make the illusion effectively.Both systems of perspective describe how objects appear in relation to their distance from the observer. This is not so much science as a means of describing, and by interpretation of illustrating, objects in space.  |   |

|  |  |
| --- | --- |
| **BASIC CONCEPTS**The **horizon line** is a theoretical line that represents the **eye level of the observer**. The horizon line is the same as the horizon (the edge of the land against the sky) only on a large flat plane like the ocean. Most of the time geographic features (hills) and other objects (trees and buildings) make the horizon above the horizon line.Indoors the horizon is often not visible but there is still a theoretical horizon line representing the point of view of the observer.Look at the three sketches below. The same telephone pole is in the same position in all of the formats. The horizon (line) is different. Can you tell where you are in relationship to the poles?eyelevelThe first pole is seen from above, the second from normal eye level and the third appears to be floating over your head. An object's relationship with the horizon line shows whether you are looking up, down or straight at the object.  |   |
| **Vanishing points** are points (usually) on the horizon line where receding lines (planes) converge. The vanishing point (v.p.) is on the horizon line when an objects has horizontal planes that are parallel to the ground. When the object's planes are inclined the vanishing points can be above or below the horizon line.vp1Objects that are placed parallel to one another use the same vanishing points. Objects set at different angles each have their own vanishing points.multivpThere are two basic systems of linear perspective: one-point and two-point named after the number of vanishing points used in each.All **parallel lines** follow the same rules. If one goes to a vanishing point then all like lines go to the same vanishing point. In most systems vertical lines are drawn vertical (not in three-point perspective).The **station point** represents the eye of the observer. It is the camera in a photograph.The **picture plane** is the "window" that is represented by the picture.The **ground line** is a line that is parallel to the picture plane at the base of the object being depicted.  |   |
| **ONE-POINT PERSPECTIVE**One-point perspective is what you see when you look straight at the side of an object. It uses only one vanishing point, hence its name.oneptThe line of sight in one-point perspective is perpendicular (at a right angle to) the side of the cube in these examples. That means you see the near side in plane view (actual shape undistorted by perspective).onept2There are only three kinds of lines used in one-point perspective:**Vertical edges** are shown as **vertical lines**.**Horizontal edges** (perpendicular to the line of sight and parallel to the ground) are shown as **horizontal lines**.**Edges that recede** (are parallel to the line of sight) are on lines that **converge at the vanishing point** on the horizon line.Note that these same three (and only these three) kinds of lines are used to draw the cubes regardless to where they are in the picture.Also note that the cube to the left, while technically correct, appears distorted. One-point perspective only depicts objects near the vanishing point with accuracy.  |   |
| **TWO-POINT PERSPECTIVE**Two-point perspective is used when you look at or into the corner of an object. There are two vanishing points since the two sets of sides are receding in two different directions.2point1In the real world vanishing points are very far apart. Imagine strings streaming out parallel to the edges of a cube going to the horizon. The horizon is miles away so the vanishing points are many miles apart. When you draw them only a few inches apart on a piece of paper there is going to be some distortion in the image produced.2point2Again there are only three different kinds of lines needed to draw in two-point perspective:**Vertical** **edges** are drawn as **vertical lines**.**Edges of sides that recede toward the right** are on lines converging at the **right vanishing point**.**Edges of sides that recede toward the left** are on lines converging at the **left vanishing point.**Both of the cubes in the example use only the same three kinds of lines. You see the top of the cube below the horizon line (your eye level). You see the bottom of the cube above the horizon line and more of its left side because it is to the right of your position in the center of the vanishing points.  |   |
| **USING LINEAR PERSPECTIVE**The use of linear perspective to draw architectural subjects is obvious. All subjects, though, still obey the same rules as geometric shapes. A thorough knowledge of perspective is required to successfully position objects in space.For a more thorough description of perspective check out: Southern Arkansas University's excellent Art Chalkboard site <http://www.saumag.edu/art/studio/chalkboard/draw.html>and the Museum of Science in Boston's site about Leonardo de Vinci and perspective <http://www.mos.org/sln/Leonardo/LeonardosPerspective.html>  |   |

**ATMOSPHERIC PERSPECTIVE**Atmospheric perspective deals with how the appearance of an object is affected by looking at it through a layer of air. Moisture, dust and pollutants in the atmosphere act to filter the visual information.atmopsp4This is most apparent on a foggy day when it may be difficult to see across the street. Even in the clear, dry air of a desert the atmosphere changes the appearance of distant objects.The changes follow the following general rules:  |
| **Contrast** is greatest for close objects. Distant objects have less contrast in them and less to their surroundings. Each row of hills receding into the distance has less contract with the next (see photo above). contrastRemember that value contrast is the strongest contrast when creating spatial illusions.  |
| **Colors** also change with depth. All of the colors are clear on near objects. Bright colors are only seen on close objects. Warm colors also show up more on near objects. As objects get farther away the colors dull and eventually turn blue gray. colorPartially because of this warm colors appear to closer than cool colors (more about this under color). Choose colors in an image accordingly.  |
| F**ocus** in an image also gives depth clues. Close objects are generally more sharply focused than distant objects. It is possible to alter this with a camera but the mind sees softly focused edges as being farther away than sharp edges. focusThere may be compositional reasons to soften the focus of close objects in an image to call attention on something farther back in space.  |
| **Details** are much more apparent on near objects because of all of the above. Linear perspective makes more distant details too small to see but it is low contrast that tends to flatten distant objects. atmopsp6Pay attention to how these concepts play out when you are looking at landscape. The same tree looks not only smaller in the distance (linear perspective) but also less leafy (contrast, detail and focus) and not as bright a green (color). As the trees get farther away they blend into the landscape and eventually all you see are rows of hills, flat as cutouts, receding to the horizon. This is especially true on a hazy day or when looking into the sun.atmopsp7 |