SHAPE AND TWO-DIMENSIONAL SPACE

Shape is flat: a two-dimensional area.

Shapes can be **positive shapes**, or 'figures' that stand out against a background.
The space that these 'figures' or 'positive shapes' sit in (often referred to as the ground) can take on important forms itself, and the shapes we see form out of this space are called **negative shapes**.

Negative shapes can become important shapes based on how the positive shapes around them are positioned. This can be done boldly, where the shapes are all relatively easy to separate and read, or it can be accomplished on a very detailed scale, where the transformation is more subtle. When negative shapes are more considered, they tend to make the overall image more interesting, because it gives your eye more to look at and consider.

Figure/ground reversal occurs in a design or image where the positive shapes and the negative shapes share equal visual importance. This makes the design very dynamic, and it makes it difficult to decide what you are looking at. Your eye keeps shifting back and forth, recognizing one shape as the dominant positive shape, and then the other.

THREE-DIMENSIONAL SPACE

Mass is a solid form that occupies three-dimensional volume. An easy way to understand the difference between shape and mass is to consider the difference between a square (shape) and a cube (mass).

Rather than refer to negative, or empty areas, of three-dimensional space as **negative shapes**, we refer to them instead as **negative space**.

Representing Three-Dimensional Space: in order to create a sense of depth, of three dimensions, on a flat canvas or piece of paper, the artist must rely on some form of illusion. Many different techniques have been developed to achieve a convincing illusion, and many are used simultaneously.

Overlapping creates the illusion that one object is in front of another. Often times overlap is combined with changing the scale, or size, of objects. If two objects, especially two objects of similar shape, are shown where one is much larger, we perceive it as being closer to us.

Shadows can help create an illusion of space. They help to place objects "in space," and if one shape casts a shadow on another, then we perceive is as being in front of the object that has the shadow on it.

LINEAR PERSPECTIVE

o Linear perspective is a mathematical system for projecting the apparent dimensions of a three-dimensional object onto a flat surface, or the picture plane.

o Developed in the Renaissance, perspective offered a methodical approach to depicting the rational reality perceived by artists in the fifteenth century. Through perspective, the viewer is invited to enter an illusory world.

Even though many recent philosophical and aesthetic theories challenge this conception of reality, perspective remains the most pervasive Western system for suggesting three-dimensionality on the two-dimensional surface.

o Linear perspective is based on five basic concepts:

1. **Objects appear to diminish in size** as they recede into the distance.
   Perspective is possible because the rate at which objects diminish is regular and consistent.

2. The point at which objects disappear entirely is called a **vanishing point**. Sets of parallel lines (such as train tracks) converge at a vanishing point as they go into the distance, creating deep space.

3. In basic **one-point** and **two-point** perspective, all vanishing points are positioned on the eye level, or horizon line, which is level with the artist's eyes.

4. Because all proportional relationships shift with each change in position, a fixed viewing position is an essential characteristic of linear perspective.

5. Only a limited area is clearly visible from a fixed position. To accommodate a larger viewing area, you must move farther away from the object to be drawn. This expands the cone of vision and increases the area being viewed.

o **One-point perspective** occurs when the lines receding into space appear to converge at a single point on the eye level. All vertical and horizontal lines run parallel to the edges of your sheet of paper, and all diagonal lines point to the vanishing point. One-point perspective is relatively simple and can be very dramatic.

o **Two-point perspective** is used when the lines receding into space appear to converge at two vanishing points on the eye level. This occurs when the viewer is confronted with the vertical edge of an object (a cube, for example), rather than the flat front. Now, only the vertical lines remain parallel to each other and the edge of the paper. All other lines recede back to the two vanishing points on the eye level.

o **Three-point perspective** is used when the lines receding into space appear to converge at two vanishing points on the eye level, plus a third point placed above or below the eye level. This occurs when the artist is positioned far above or below the object (ex: cube), creating a "bird's eye" or "worm's eye" view. Now, all the lines converge at the various vanishing points: none of the sets of lines run parallel to the edge of the paper.

o Using Perspective: There are distinct advantages to each of these basic types of perspective. One-point perspective is simple and straightforward. This type of perspective pulls the viewer into the image using a single, dramatic focal point. Two-point perspective is often used for diagrams and architectural drawings. Three-point perspective creates an exaggerated sense of space and a unique viewpoint. We feel that we are being actively pulled upward or downward by the illusion of space it creates. This type of perspective is often used when an artist or designer wants to communicate the power and energy of the technological or architectural setting.

o Trome l'oeil: A trompe l'oeil is an art technique involving realistic imagery in order to create the optical illusion that the depicted objects exist in three dimensions.

o Forced perspective is a comparable illusion in architecture.

OBLIQUE PROJECTION is a system for projecting space, commonly found in Japanese art. In oblique projection, the front of the object or building is parallel to the picture plane, and all the sides, which recede at an angle, remain parallel to each other. This is different than linear perspective, where the sides converge towards the vanishing point, and in doing so, do not remain parallel to one another.

FORESHORTENING is when artists correct for the visual distortion that happens when we see objects from

certain points of view. The dimensions of extremities viewed close up look distorted and distracting in real life, as seen in photographs. Artists working in other materials, such as painting or drawing, and choose to avoid this distortion by "shortening the foreground object" – hence, foreshortening.

THE NEAR AND FAR:

foreground, middle ground, and background.

When we look at an image that depicts a sense of space, we divide the areas of this space into two major categories – the foreground and the background. You can further refine this categorization by adding a middle ground in between. This is especially useful is there is a great amount of visual detail shown in areas that seem very distant, somewhat distant, and close at hand. The foreground is the area that is close to us: it is right before our eyes. Objects in the foreground will appear larger than similar ones in the background, and the level of visual detail usually is stronger on objects in the foreground. The background is the area that is far away; objects seem to be placed with far more space between themselves and our position. Systems such as linear perspective need to show a consistent pattern between the foreground, middle ground, and background. Other methods of depicting space are not bound to such limitations. Many modern artists choose to blur the clear-cut boundaries between what is far away, and what is close by, to create mysterious and interesting images.

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shape

negative shape

figure/ground reversal

mass and form

negative space

overlap

linear perspective

oblique projection

foreshortening

foreground, middle ground, background

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Six ways to create the illusion of Space Worksheet

Linear Perspective

Size - Scale

Overlpapping

Vertical Placement

Value and Color

Detail and Focus