**Principles of Graphic Design**

Some of the most commonly acknowledged principles of design are alignment, balance, contrast, proximity, repetition, and white space. These are all elements of what is referred to as graphic design "composition." Additionally, compositions are evaluated based on the use of (and the successes or failures from the use of) harmony, emphasis, gestalt, pattern, movement, rhythm, proportion, and unity.

**What is Graphic Design?**

Graphic design is defined by the, rules and considerations of design applied to a visual object. Graphic design can be used for advertising, or simply for entertainment intended for the mind. The expansion of information via visual objects contributes to the arousal of emotional and aesthetic feelings in an artistic way.

Graphic Design may be a contributor to many other forms of arts and crafts, for example the elaboration of typefaces used in print and media, the order and flow of a cartoon, or to the creation of road signs and even emoji. Graphic design considerations influence all visual aspects of our technological society and is an intrinsic part the shared human culture.

**The Principles Explained**

**Alignment**

Alignment is the act of keeping design objects in line, not only vertically or horizontally but across any linear plane. Alignment also be done respectively, i.e. one design element is positioned with respect another element within same frame.

**Balance**

Designs in balance (or equilibrium) have their parts arrangement planned, keeping a coherent visual pattern (color, shape, space). "Balance" is a concept based on human perception and the complex nature of the human senses of weight and proportion. Humans can evaluate these visual elements in several situations to find a sense of balance. A design composition does not have to be symmetrical or linear to be considered balanced, the balance is global to all elements even the absence of content. In this context perfectly symmetrical and linear compositions are not necessarily balanced and so asymmetrical or radial distributions of text and graphic elements can achieve balance in a composition.

**Contrast**

Distinguishing by comparing/creating differences. Some ways of creating contrast among elements in the design include using contrasting colors, sizes, shapes, locations, or relationships. For text, contrast is achieved by mixing serif and sans-serif on the page, by using very different type styles, or by using type in surprising or unusual ways. Another way to describe contrast, is to say "a small object next to a large object will look smaller". As contrast in size diminishes, monotony is approached.

**Emphasis**

Making a specific element stand out or draw attention to the eye. Emphasis can be achieved in graphic design by placing elements on the page in positions where the eye is naturally drawn, by using other principles such as contrast, repetition, or movement. Bold and italic type provides emphasis for text. Graphic elements gain emphasis through size, visual weight, color, complexity, uniqueness, placement on the page, and other features.

**Gestalt**

Sometimes considered a distinct principle of design, gestalt is the concept that "the whole is greater than the sum of its parts." Gestalt is a concept from psychology, where theorists note the propensity of humans to conceptually group things together to make a meaningful whole. When viewing designs, humans apply this principle unconsciously by seeing connections and relationships among and between the elements in the design. The overall perception of gestalt in a design is created through harmony, unity, balance, proportion, proximity, and other visual cues. Designers can use this principle to create visual connections and relationships that clarify and strengthen the overall "feel" and meaning of the design.

**Harmony**

As with music, graphical elements can be said to be working in harmony - the individual parts come together as visually compelling and a meaningful whole. Disharmony can also be used just as it is in musical compositions: to enhance the emotional complexity, to challenge the viewer, and to give a contrast within the overall composition.

**Movement**

Movement is creating an instability, making motion to blur the image. Movement can be achieved by using graphic elements that direct the eye in a certain direction such as arrows that point the way overtly or a series of lines or dots that get progressively larger or smaller, creating a subtler sense of movement. Movement can be accomplished simply by using a photograph or clip art of something moving - a runner - as opposed to something stationary - a person standing.

**Proportion**

This indicates the relative visual size width, and weight of a graphical elements in a design composition.

**Proximity**

Closeness or distance of individual design elements. Close proximity indicates a connection. Proximity means grouping elements together so that you guide the viewer/reader to different parts of the message.

**Repetition**

Repeating a sequence; having it occur more than a few times. In design, repetition creates visual consistency in page designs, such as using the same style of headlines, the same style of initial capitals, or repeating the same basic layout from one page to another.

Excessive repetition (monotony) may lead to boredom and uninteresting compositions. If one cannot avoid excessive repetitions for any reason, do not forget to add some visual breaks and white spaces where eyes can rest for a while.

**Rhythm**

A strong, regular, repeated pattern of movement or sound. Successful designs have an effective ebb and flow. Text and Graphics should seem to be paced and patterned. Spacing is an effective application of this principle. Second, human beings are more comfortable with variation in general. Psychologically, most any serious lack in variation of anything (a solid, a line, a sound, a situation) can become very boring. Adding a little variation at non-specific intervals (every now and again) gives most any design an interesting appeal as long as it is not overdone.

In setting type, rhythm can be created or disrupted. Compare the gibberish strings, "as erav mono ewone zenao oro remuna oravanam" and "githol urtym reislyt quadirit". Notice how the latter seems to be more organic and readable than the former. This is resultant of two things. One, the eye more easily follows abnormalities and variation, like an ocular foothold. Too-narrow columns result in over-hyphenation. Images that interrupt a passage of text can break the rhythm for the reader and they could disturb the visual appearance of the page. The definition of rhythm is- the suggestion of motion through the use of various elements.

**Unity**

Unity creates a feeling of wholeness. Unity is usually achieved when the parts complement each other in a way where they have something in common. Unity can be achieved by use of the same color, or different tints of it, or using a similar graphic style for illustrations.

**White Space**

Areas of a design void of text or graphics. White space includes margins, gutters, space between lines of type (leading), off-set of text from images (text wraps) and any other part of the page that is empty. White space is also analogous to "negative space" where "positive space" is defined as images, blocks of text, and other graphical elements. In graphic design, the white space, or negative space, is considered an important element of the overall design. It is used - and evaluated - based on the same criteria as the rest of the elements in the design. White space can add to or detract from the balance, unity, harmony, rhythm and overall success of a design. White space can give emphasis, contrast, and movement. It can be used for repetition and pattern, and work within various relationships with other elements of the positive and negative spaces in the design.

# Visual design elements and principles

The best designers sometimes disregard the principles of design. When they do so, however, there is usually some compensating merit attained at the cost of the violation. Unless you are certain of doing as well, it is best to abide by the principles.

## Design elements

Design elements are the basic units of any visual design which form its structure and convey visual messages. Painter and design theorist Maitland E. Graves (1902-1978), who attempted to gestate the fundamental principles of aesthetic order in visual design, in his book, *The Art of Color and Design* (1941), defined the elements of design as Line, Direction, Shape, Size, Texture, Value, and Color (in that order), concluding that "these elements are the materials from which all designs are built."

### **Color**

* Colors are the main role in the elements of design with the color wheel being used as a tool, and color theory providing a body of practical guidance to color mixing and the visual impacts of specific color



Color star containing primary, secondary, and tertiary colors.

**Uses**

* Color can aid organization to develop a color strategy and stay consistent with those colors.
* It can give emphasis to create a hierarchy to the piece of art.
* It is also important to note that color choices in design change meaning within cultural contexts. For example, white is associated with purity in some cultures while it is associated with death in others.

#### **Attributes**

* Hue = color.
* Values, tints and shades of colors that are created by adding black to a color for a shade and white for a tint. Creating a tint or shade of color reduces the saturation.
* Saturation gives a color brightness or dullness, and by doing this it makes the color more vibrant than before.

The three primary hues which cannot be created by mixing are red, yellow and blue. In practice, however, a more practical set of "double primaries" is utilized to allow for creating more intense saturation of colors. One author recommending this double primary system of color mixing is Michael Wilcox in his book: BLUE AND YELLOW DON'T MAKE GREEN.

### **Line**

Line is an element of art defined by a point moving in space. It is probably the most fundamental of the elements of design as it is usually the starting place for much of artistic creation. Lines can be vertical, horizontal, diagonal, or curved. They can be any width or texture. And can be continuous, implied, or broken.

### **Shape**

A shape is defined as a two or more-dimensional area that stands out from the space next to or around it due to a defined or implied boundary, or because of differences of value, color, or texture. All objects are composed of shapes and all other 'Elements of Design' are shapes in some way.

#### **Categories**

* Mechanical Shapes or Geometric Shapes are the shapes that can be drawn using a ruler or compass. Mechanical shapes, whether simple or complex, produce a feeling of control or order.
* Organic Shapes are freehand drawn shapes that are complex and normally found **in** nature. Organic shapes produce a natural feel.

### **Texture**



The tree's visual feelings are represented here in this image.

Meaning the way, a surface feels or is perceived to feel. Texture can be added to attract or repel interest to an element, depending on the pleasantness of the texture.

**Types of texture**

* Tactile texture is the actual three-dimension feel of a surface that can be touched. Painter can use impasto to build peaks and create texture.
* Visual texture is the illusion of the surfaces peaks and valleys, like the tree pictured. Any texture shown in a photo is a visual texture, meaning the paper is smooth no matter how rough the image perceives it to be.

Most textures have a natural touch but still seem to repeat a motif in some way. Regularly repeating a motif will result in a texture appearing as a pattern.

### **Space**

In design, space is concerned with the area deep within the moment of designated design, the design will take place on. For a two-dimensional design, space concerns creating the illusion of a third dimension on a flat surface:

* Overlap is the effect where objects appear to be on top of each other. This illusion makes the top element look closer to the observer. There is no way to determine the depth of the space, only the order of closeness.
* Shading adds gradation marks to make an object of a two-dimensional surface seem three-dimensional.
* Highlight, Transitional Light, Core of the Shadow, Reflected Light, and Cast Shadow give an object a three-dimensional look.
* Linear Perspective is the concept relating to how an object seems smaller the farther away it gets.
* Atmospheric Perspective is based on how air acts as a filter to change the appearance of distant objects.

### **Form**

Form may be described as any three-dimensional object. Form can be measured, from top to bottom (height), side to side (width), and from back to front (depth). Form is also defined by light and dark. It can be defined by the presence of shadows on surfaces or faces of an object. There are two types of form, geometric (man-made) and natural (organic form). Form may be created by the combining of two or more shapes. It may be enhanced by tone, texture and color. It can be illustrated or constructed.

## Principles of design

See also: Gestalt laws of grouping

Principles applied to the **elements of design** that bring them together into one design. How one applies these principles determines how successful a design may be.

### **Unity/harmony**

According to Alex White, author of *The Elements of Graphic Design*, to achieve visual unity is a main goal of graphic design. When all elements are in agreement, a design is considered unified. No individual part is viewed as more important than the whole design. A good balance between unity and variety must be established to avoid a chaotic or a lifeless design.

#### **Methods**

* Perspective: sense of distance between elements.
* Similarity: ability to seem repeatable with other elements.
* Continuation: the sense of having a line or pattern extend.
* Repetition: elements being copied or mimicked numerous times.
* Rhythm: is achieved when recurring position, size, color, and use of a graphic element has a focal point interruption.
* Altering the basic theme achieves unity and helps keep interest.

### **Balance**

It is a state of equalized tension and equilibrium, which may not always be calm.

#### **Types**



The top image has symmetrical balance and the bottom image has asymmetrical balance

* Symmetry
* Asymmetrical balance produces an informal balance that is attention attracting and dynamic.
* Radial balance is arranged around a central element. The elements placed in a radial balance seem to 'radiate' out from a central point in a circular fashion.
* Overall is a mosaic form of balance which normally arises from too many elements being put on a page. Due to the lack of hierarchy and contrast, this form of balance can look noisy but sometimes quiet.

### **Hierarchy**

A good design contains elements that lead the reader through each element in order of its significance. The type and images should be expressed starting from most important to the least important.

### **Scale/proportion**

Using the relative size of elements against each other can attract attention to a focal point. When elements are designed larger than life, scale is being used to show drama.

### **Dominance/emphasis**

Dominance is created by contrasting size, positioning, color, style, or shape. The focal point should dominate the design with scale and contrast without sacrificing the unity of the whole.

### **Similarity and contrast**

Planning a consistent and similar design is an important aspect of a designer's work to make their focal point visible. Too much similarity is boring but without similarity important elements will not exist and an image without contrast is uneventful so the key is to find the balance between similarity and contrast.

#### **Similar environment**

There are several ways to develop a similar environment:

* Build a unique internal organization structure.
* Manipulate shapes of images and text to correlate together.
* Express continuity from page to page in publications. Items to watch include headers, themes, borders, and spaces.
* Develop a style manual and adhere to it.

#### **Contrasts**

* Space
	+ Filled / Empty
	+ Near / Far
	+ 2-D / 3-D
* Position
	+ Left / Right
	+ Isolated / Grouped
	+ Centered / Off-Center
	+ Top / Bottom
* Form
	+ Simple / Complex
	+ Beauty / Ugly
	+ Whole / Broken
* Direction
	+ Stability / Movement
* Structure
	+ Organized / Chaotic
	+ Mechanical / Hand-Drawn
* Size
	+ Large / Small
	+ Deep / Shallow
	+ Fat / Thin
* Color
	+ Grey scale / Color
	+ Black & White / Color
	+ Light / Dark
* Texture
	+ Fine / Coarse
	+ Smooth / Rough
	+ Sharp / Dull
* Density
	+ Transparent / Opaque
	+ Thick / Thin
	+ Liquid / Solid
* Gravity
	+ Light / Heavy
	+ Stable / Unstable

Movement is the path the viewer’s eye takes through the artwork, often to focal areas. Such movement can be directed along lines edges, shape and color within the artwork, and more.

**Vector VS Raster Graphics**

**What is the difference?**

The difference between vector and raster graphics is that raster graphics are composed of pixels, while vector graphics are composed of paths. A raster graphic, such as a gif or jpeg, is an array of pixels of various colors, which together form an image.

A vector graphic, such as an .eps file or Adobe Illustrator? file, is composed of paths, or lines, that are either straight or curved. The data file for a vector image contains the points where the paths start and end, how much the paths curve, and the colors that are applied to either “or both” the border or fill the paths.

Because vector graphics are not made of pixels, the images can be scaled to be very large without losing quality.

Raster graphics, on the other hand, become "blocky," since each pixel increases in size as the image is made larger. That’s why objects like logos and other designs are typically created in vector format. With vector art the quality is preserved and will look the same on a business card as it would look on a billboard.

**Image Resolution:**

The term ***resolution*** is often considered equivalent to the pixel count in digital imaging. When the pixel counts are referred to as "resolution", the convention is to describe the ***pixel resolution*** with the set of two positive integer numbers, where the first number is the number of pixel columns (width) and the second is the number of pixel rows (height), for example as ***7680 × 6876***. Anther convention used describes pixels per length unit or pixels per area unit, such as pixels per inch or per square inch.

Below is an illustration of how the same image might appear at different pixel resolutions.



**Resolution Dependence**

Resolution Dependence is where elements on a computer screen are rendered at sizes dependent on the original size of the image and the pixels per inch resulting in a graphic element that is fixed to a predetermined and inflexible size, regardless of the size of the screen. Resolution dependent graphics are usually photo based images and are generally created in Adobe Photoshop.

**Resolution Independence**

Resolution independence is where elements on a computer screen are rendered at sizes independent from the pixel grid, resulting in a graphical element that is displayed at a consistent size, regardless of the size of the screen. Resolution independent graphics are flexible and have the ability to be enlarged or reduced at will, this flexibility offers a greater range of design possibilities than resolution dependent graphics can afford.