Visual Design for Communication

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Visual Design for Communication

Visual communication is precisely what its name suggests: Communicating information through images and design. It's typically a combination of text and images—graphics, illustrations, photos, video—and published in print and in digital media. If digital, it is often interactive.

For effective communication, the emphasis should be on how to most clearly convey concepts and data to an audience. Although there is an aesthetic consideration, the goal is not to produce a fine art object. There shouldn't be an attempt at personal expression, the goal should be the clear and efficient conveyance of information in a way that will leave a positive and lasting impression.

Visual communication is in fact more concerned with human psychology than art, in particular how most people respond to visual stimuli.

And that is where the topics covered here originate, with human perception studies as well as with what most professional designers agree leads to good design. On the following pages are summaries of several theories relevant to visual communication, followed by a list of commonly accepted principles that lead to effective design.

Design and Media

Creating and publishing visual content has always required specific skills, depending on the medium. One must learn technical skills for the production of media content, which in the current era requires learning how to use graphics applications, as well as some knowledge about the print and digital publishing industries. But more than that, effective communication requires knowledge of design principles.

There are commonly accepted principles for effective design which have been shown to work in practice. There is also an extensive field of study on how people respond to visual stimuli—studies on human perception, about how the brain interprets and stores visual infomation. Being informed about these areas—design principles and human perception—can lead to more successful results.

Defining 'Design'

The word design is one that almost everyone knows, but if asked, most people have a hard time defining. Here are some dictionary definitions:

> **Purpose or planning that exists behind an action, fact, or object.**
>
> *— Oxford English Dictionary*

> **Organization or structure of formal elements in a work of art; composition.**
>
> *— dictionary.com*

> **To create, fashion, execute, or construct according to plan**
>
> **: to have as a purpose : intend**
>
> **: to devise for a specific function or end**
>
> *— Merriam Webster*

One theme that runs through these definitions is that designing is an act of intentionality, an activity with a specific goal. That activity is generally to create something within a given medium. For our purposes in discussing visual communication, design is the purposeful selection and arrangement of elements within a particular medium in order to communicate information, ideas or emotions.

Here is a more concise definition for our purposes:

> **Design is the purposeful arrangement of elements within a medium for an intended outcome.**

I. Four theories of visual communication

Understanding some of the ways that the conscious part of our brains tries to make sense of what we see can help in designing images and publications that communicate more effectively.

This section will explain four psychological theories about how we interpret what we see.

They are:

- **Cognitive Theory**
- **Semiotics**
- **Ecological Theory**
- **Gestalt Theory**

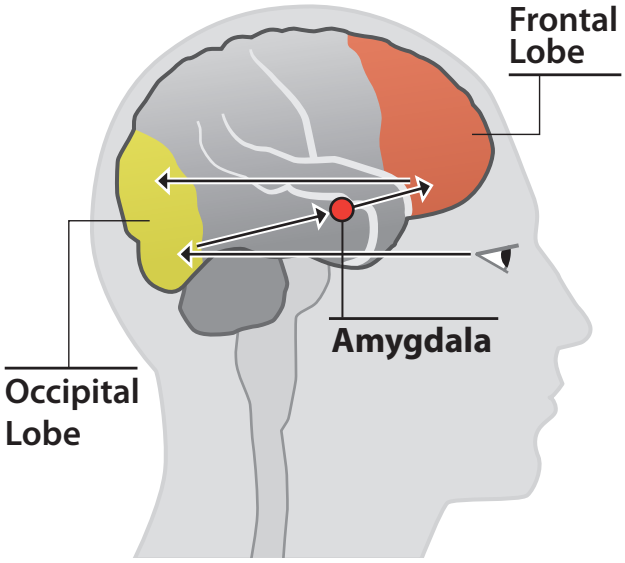
Interpreting and retaining visual information

Before delving into these theories, it's helpful to have a basic understanding of how our brains interpret and retain visual information.

The goal of effective communication is not just to appeal to the intended audience but to make a lasting impression, to get the audience to understand and remember what is being communicated.

The brain is complicated, of course, and we don't fully understand how it works. We do know that there are areas in it that serve certain functions, and one in particular, a small area called the amygdala (there are actually two, one for each hemisphere) seems to control emotions to some degree. It also seems to serve as a filter for all the incoming visual stimuli from our eyes, which would otherwise overwhelm us. In order for information to get to our frontal lobes where it is processed, and then to get stored in memory, it first needs to get through that filter. And that's what effective visual communication needs to accomplish.

The challenge is to not just stand out in the sea of visual stimuli that most of us experience daily but to get our message into the conscious areas of people's brains, be understood, and remembered.



How the brain stores memories

The brain goes through several steps to process visual informaton:

– Sensory information from the eyes goes to the occipital lobe in the back of the brain, which processes visual data.

– The visual information then passes through the amygdala on the way to the frontal lobe. The amygdala acts as a filter, allowing only relevant information through.

– The frontal lobe is where our conscious activity takes place. It processes the visual data and tries to make sense of it.

– Anything noteworthy is channeled back to the occipital lobe, wher it is stored as memories.

1. Cognitive Theory

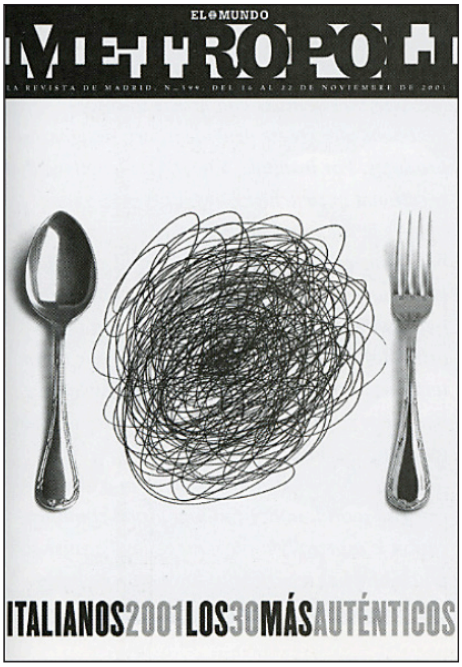
"We understand what we see from what we know."

Cognitive theory, while being a broad area of psychological study, does help us understand how people interpret and respond to what they see. The relevant part of the theory is this: We analyze what we see by comparing it to what we're familiar with, which quickly allows us to categorize it—a car, a bird, a desk, a person.

We are constantly searching for patterns with which we're familiar. This allows us to quickly make sense of the world around us. It would otherwise be close to impossible to constantly analyze and identify everything we see at every moment.

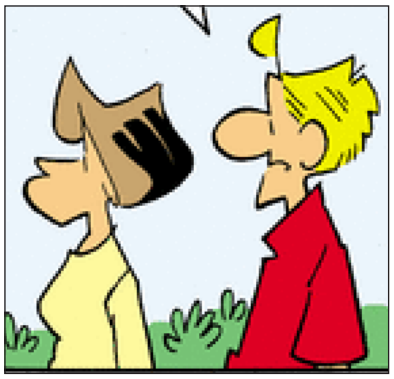
This human quality allows artists and illustrators to make abstract representations and caricatures of reality. Without it, all artwork would have to be as realistic as a photo to be understood.

Cognitive theory examples



El Mundo

We apply our experience of a plate of spaghetti to the scribbled lines and make the cognitive association in our perception of this magazine cover. Without the spoon and fork however, we probably wouldn't make the connection.



Arlo & Janice by Jimmy Johnson

Comic strip characters often bear little resemblance to real humans, yet we recognize them as such because they fit into our preconceived images of basic human physical features.

Value judgment

At the same time that we identify things based on our memory, we also apply value to them: Good or bad, appealing or offputting, safe or dangerous, for example.

This is what makes design important, because it will influence perceptions about the quality and reliability of what we're creating. It may engender or dissuade trust in the product or content.

Example

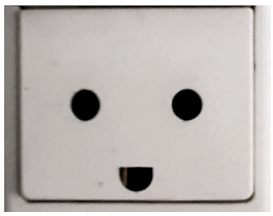
The two simultaneous processes that our brains do when we look at something are to identify it and pass judgment on it.

Identification: Because of your memories and previous experience with cars, you are able to quickly identify one when you see it. You might also recognize the make and style.

Value judgment: At the very same time that you identify the car, you assign a value to it. You would probably assign a higher value to the second vehicle based on its appearance.

Pareidolia

This is the phenomenon in which we see faces, animals, and other things in otherwise random groups of shapes. This is the result of our looking for recognizable patterns that conform to what we are familiar with.

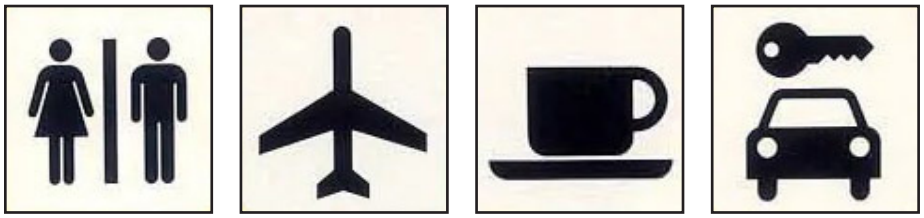


Petapixel

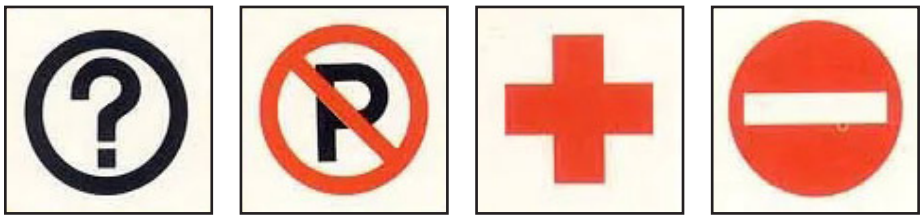
2. Semiotics

This is the study of signs and symbols. It relies on Cognitive Theory because it requires us to associate the image with something we know. There are three categories: iconic, symbolic, and indexical.

Iconic:
It resembles what it signifies.



Symbolic:
Its association has to be learned.



Indexical:
It suggests a causal or other connection to something else, such as an event.

Adapted from Darrell Gulin , art.com

3. Ecological Theory

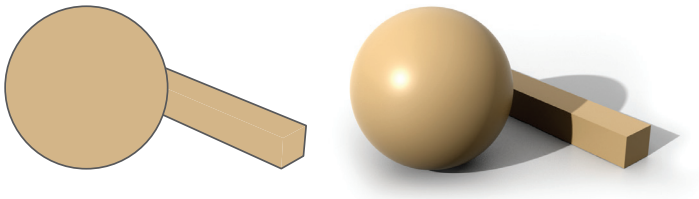
Spatial properties in the environment give us clues about the three dimensional aspects of the world around us.

Light, with the way that it strikes objects and creates gradients of value from light to dark, is the primary way in which we understand the dimensions and surface qualities of objects.

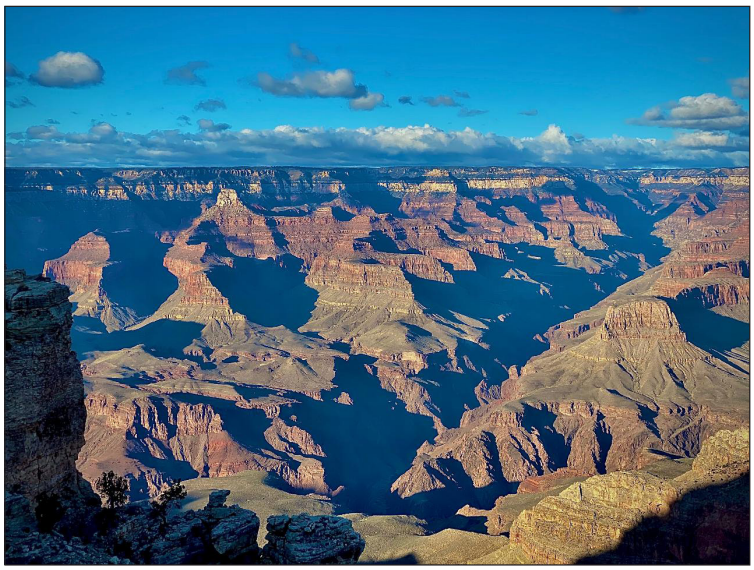
Scale informs us of how distant objects are from us as they get progressively smaller.

Atmospheric effects help us interpret space, as more distant objects become hazy, that is, they lose intensity.

Illustrations and graphics use variations in value, intensity and scale to create illusions of three dimensionality.



Gradations in value—light to dark—allow us to understand the spatial properties of objects.



National Park Service

Eyvind Earle, Green Hillside,1970

Shutterstock

4. Gestalt Theory

"The whole is greater than the sum of its parts."

It is our nature to look for patterns in what we see in the world around us, which allows us to make sense of our environment. Without pattern recognition, the visual information our brains receive would not be of much use in helping us to navigate the world.

Gestalt Theory started with a group of early 20th-century German psychologists studying human perception. The word Gestalt roughly translates to English as form, pattern, or configuration. The theory at its simplest states that rather than perceiving lots of individual objects, we tend to group them together into something larger.

As a simple example, as you're reading this, you're not perceiving each letter as a separate object, you're grouping them together into words, and then grouping the words together into sentences. You are more cognizant of each word as a single object than you are of the letters that compose it.

Artists and designers find value in this theory. Using principles derived from Gestalt Theory can help pull an image or design together to create a stronger overall impression than its separate parts could achieve on their own.

In visual design, the most commonly-employed Gestalt principles are **proximity**, **similarity**, **continuation**, **closure**, and **figure-ground**. On the next pages are examples of how they can be used.

This is a painting done by Giuseppe Arcimboldo, a 16th-century Italian artist who did a series of paintings along this theme, employing Gestalt principles even though they had not yet been defined. In this example, titled "Water" from 1566, the different sea creatures combine together to suggest a person's profile, in effect, creating something larger than its individual parts.

Gestalt Principles

These are the most commonly used Gestalt principles that can help in effective visual communication.

• Proximity

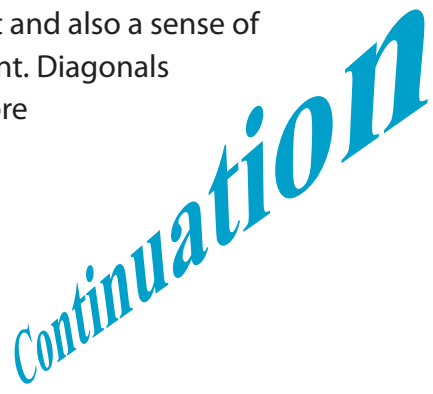
The closer elements are to each other, the more likely we see a group instead of separate parts.

• Similarity

The more elements resemble each other, the more we see a pattern instead of separate parts.

• Continuation

In our mental search for patterns, we are inclined to follow lines and curves. If objects are arranged along paths, then we perceive a larger construct and also a sense of movement. Diagonals add a more dynamic feeling.



In this example, we are more likely to perceive the word than the individual letters. In other words, we see the whole before the individual parts.

• Closure

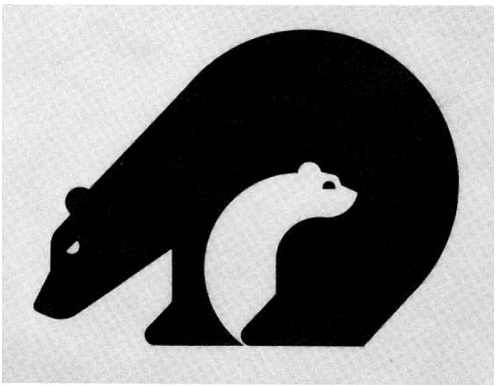
We tend to compare incomplete patterns to things we're familiar with, causing us to mentally complete them. This allows artists and designers to merely suggest images rather than having to photo-realistically depict them.

A related phenomenon known as pareidolia causes us to see images, particularly faces, even in random patterns found in nature.

Panda logo © World Wildlife Fund, Switzerland

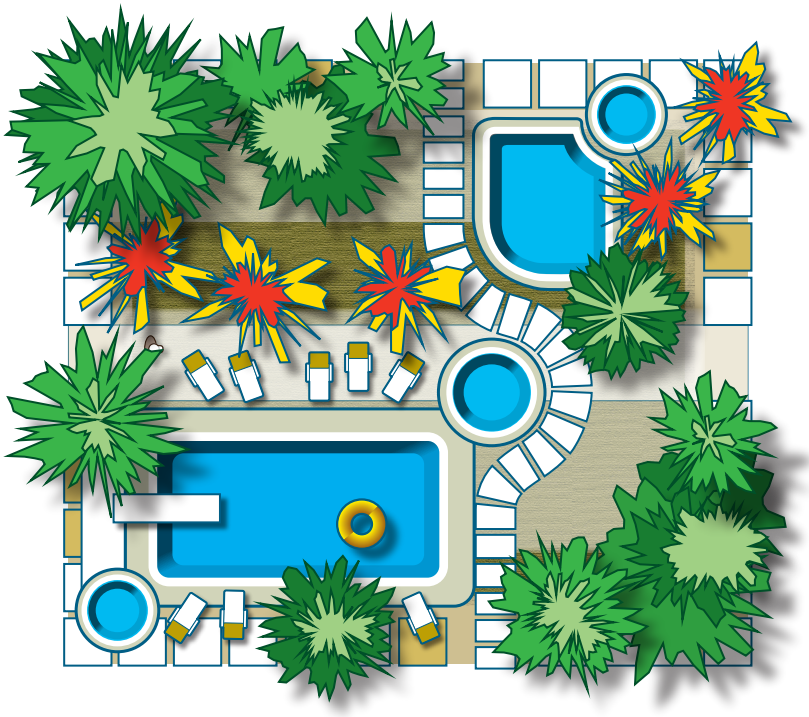
• Figure/ground relationship

A state of gestalt is achieved when all the parts of your design combine to form a larger impression, and that includes everything in the frame, both the positive and negative areas. These are also referred to as figure/ground or foreground/background.

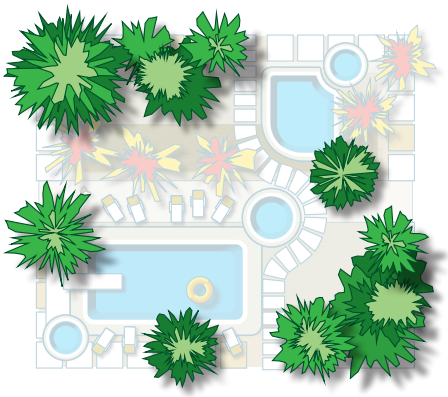


Michael Vanderbyl. Symbol proposed but not used for the California Conservation Corps.

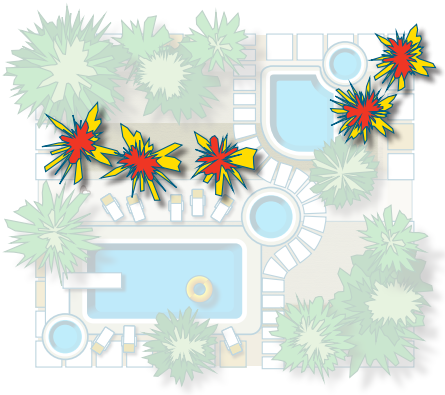
Gestalt example



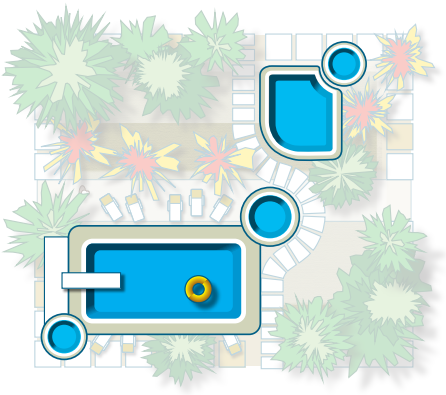
This illustration employs the three main gestalt principles of proximity, similarity and continuation.



The green shapes overlap each other to form **proximity** groups while also relying on **similarity**, with the effect being that the viewer sees groups and not individual shapes. Their arrangement across the frame also brings unity to the overall composition.



The red and yellow shapes also rely on **similarity**, and are arranged in an arc across the frame, using the principle of **continuation**. The gap is mentally filled in by the principle of **closure**.



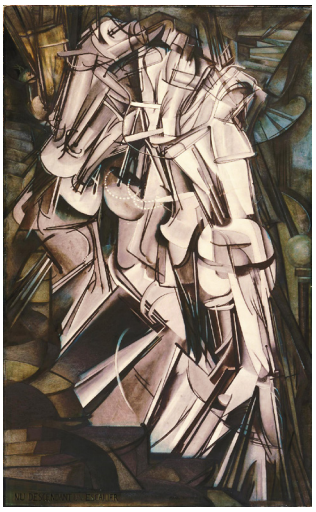
The blue shapes also use **similarity** and **continuation**, forming a diagonal sweep across the frame.
The combined effects of these groups is to create a sense of unity to the entire composition, leading viewers to see a single image instead of separate parts.

Gestalt examples

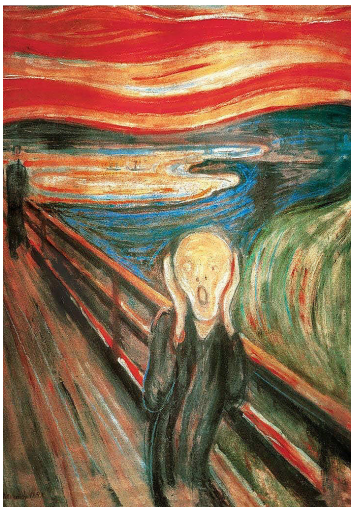
House Beautiful Magazine cover Sept. 1929

Illustration by Octavia Ocampo

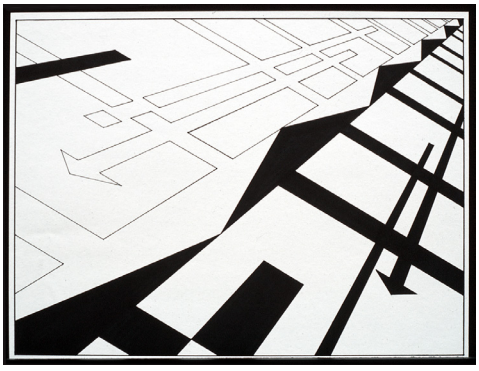
Starry Night. Vincent Van Gogh



Nude Descending a Staircase No. 2, Marcel Duchamp



The Scream. Edvard Munch



Student work, Pierce College, 1994

II. Design Principles

These are commonly accepted principles that lead to effective design, as recognized by most design professionals across fields.

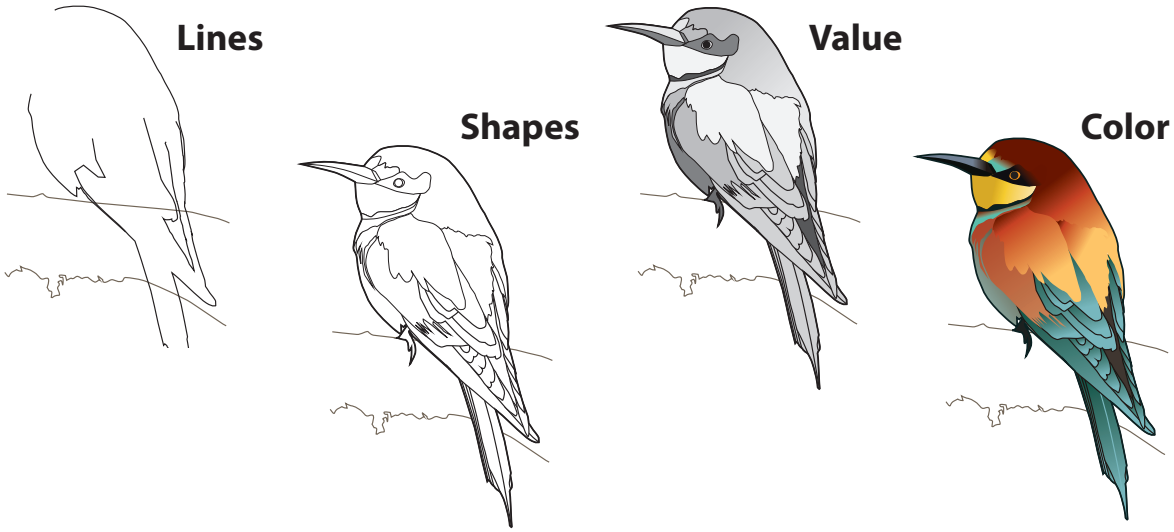
They are:

- **Repetition vs Variety**
- **Dominance**
- **Balance**
- **Figure-Ground**
- **Economy**

Elements

Each medium has its own elements. For example:
Drawing: Marks on a surface done with a pencil, pen, ink brush, piece of charcoal, etc.
Painting: Pigments applied to a surface with a brush, palette knife, air brush, hands, etc.
Sculpture: Physical materials such as wood, stone, metal, ceramics, etc.
Fashion design: Fabrics, leather, metal, etc.
Interior design: Furniture, paint, floor and wall coverings, curtains, decorative art, etc.
Digital media: Different colors of pixels in a digital display.
Each creative field has its unique elements, requiring expertise in working within it.

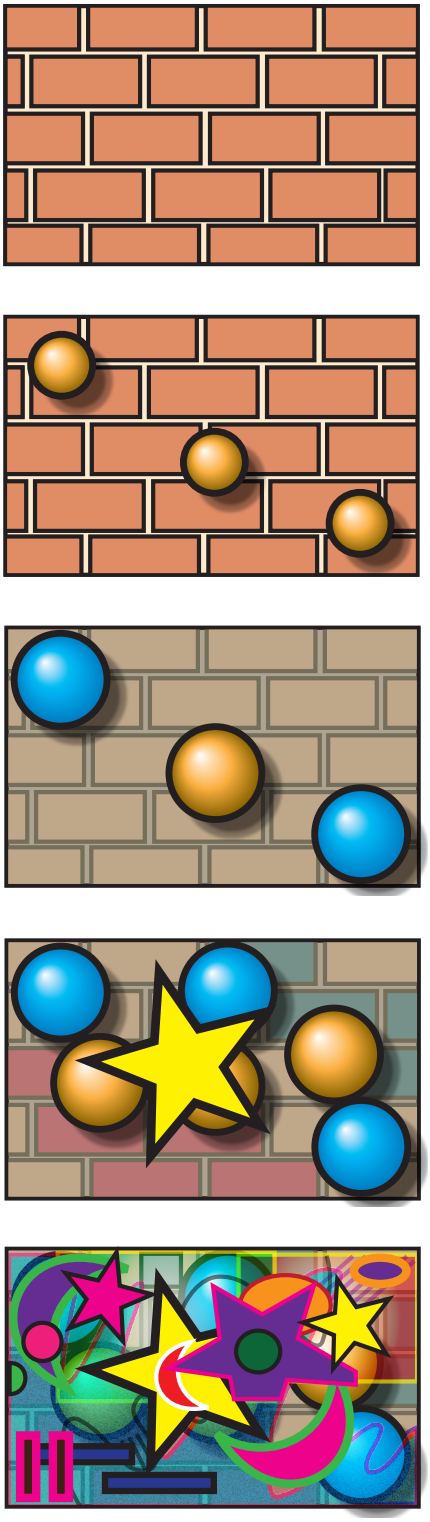
In a digital medium such as a vector drawing application, the elements are what its tools allow you to make. For example, in Adobe Illustrator, these are the available elements:



The process of design, regardless of the medium, involves selecting which elements to use and how many, and finding the best way to arrange them to achieve the desired result. Whether one is successful in achieving that will depend on how well the elements are arranged.

If the goal is to communicate an idea or emotion to others, then understanding how people react to visual stimuli, and having a knowledge of and experience with accepted design principles, can help. The following pages will summarize some of these principles.

1. Repetition vs Variety



Boring

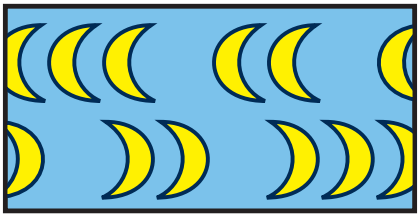
Chaotic

In whatever medium you choose, you will have to decide which of the available elements to use, and how many of each. In doing so, you usually need to find a balance between two extremes: Too little variation in elements can be boring, but too much variety can be chaotic.

In the examples at left, the images range from being too repetitive and thus uninteresting to being chaotic and lacking in unity. The goal is to find the best balance beween these extremes. That balance will likely be different in each unique project.

Rhythm

Repetition doesn't necessarily have to be boring, however. A rhythmic pattern can add enough variety to be interesting.



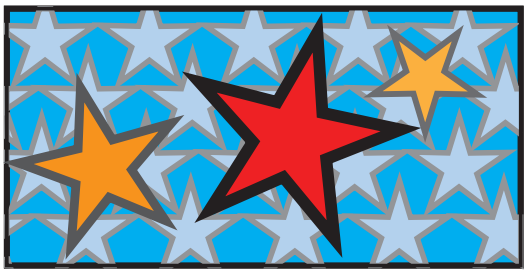
2. Dominance

It's important to establish a dominant hierarchy by placing emphasis on some elements over others. In this way you can guide the viewer's experience of your creation.

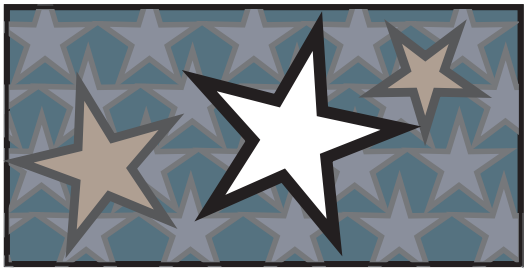
The most common ways to achieve this are through **scale, color, value** (light to dark), and **Intensity** (bright to dull).

Any element that is significantly different from the rest will stand out.

Scale and color



Scale and value

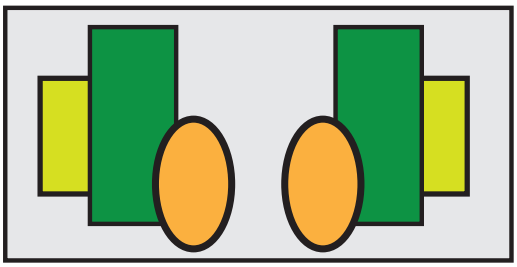


3. Balance

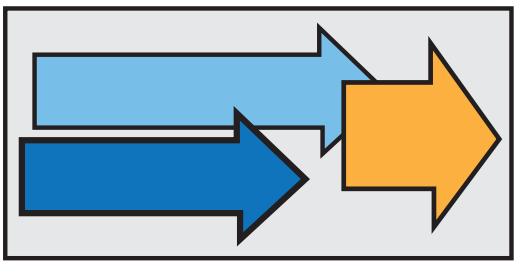
We are all intuitively aware of balance, and can sense when there is too much weight to one side or the other.

Balance can be achieved either through symmetry or through asymmetry.
Symmetry provides a sense of stability and order, while asymmetry implies a sense of motion and dynamism.

Symmetrical

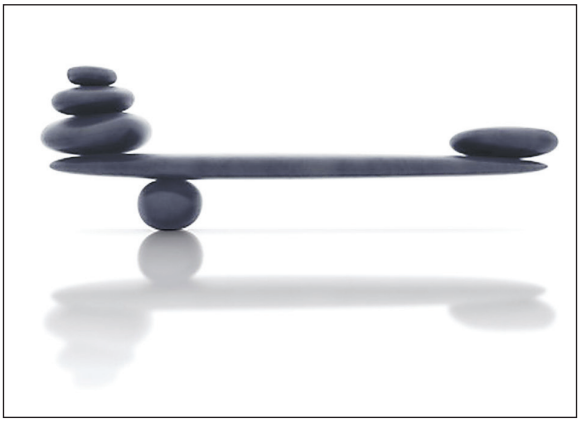


Asymmetrical



Symmetry

Asymmetry



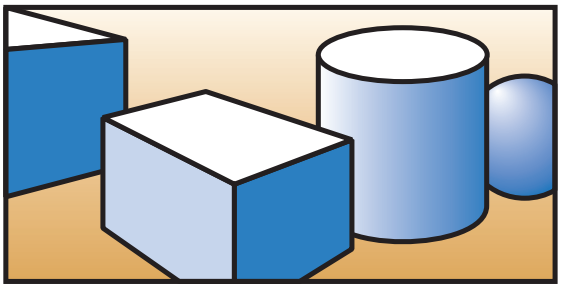
4. Figure-Ground

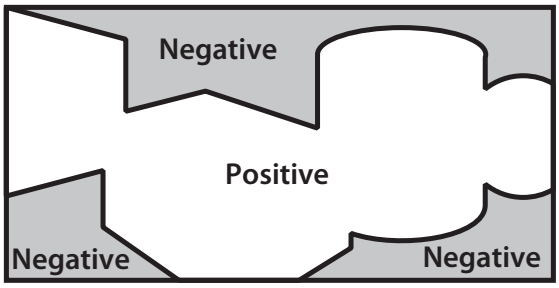
Everything in the frame or physical space is part of the work and affects the overall design, whether it's an element or the absence of one.

This applies equally to three-dimensional works, which also define the space around them.

The terms figure-ground, positive-negative, and foreground-background all mean the same thing.

The ground, or negative space, is just as much a part of the composition as the figures, or positive spaces, and must be considered equally.





5. Economy

In the context of design, economy means to **not be any more complicated than necessary**.

It doesn't mean that work always has to be simple. It is a function or outcome of Gestalt Theory, in that anything in the composition that is not contributing to the overall effect shouldn't be used.

Logos are often good examples of this principle. Look at how the Apple logo has gotten progressively simpler over time.

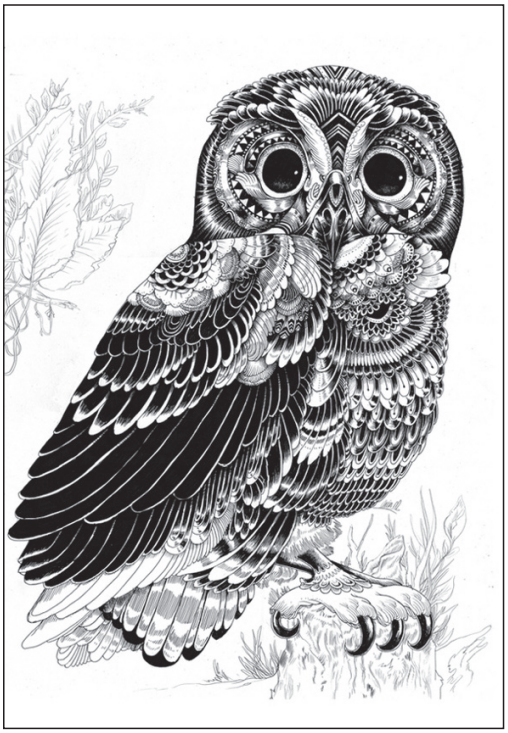
1976

1977-1978

2007-2014

Present

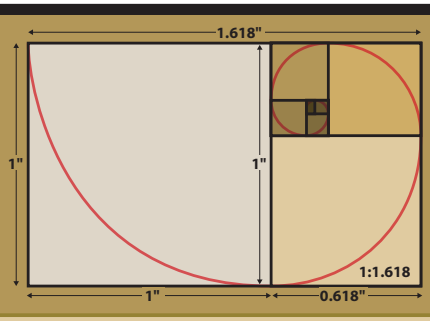
But again, it doesn't mean that every design must be simple. Here is an illustration by artist Iain Macarthur. Notice how many of the principles discussed so far make this an interesting and effective work of art: Gestalt principles of similarity and proximity, as well as a good balance of repetition vs variety.



Two additional design principles

The Golden Ratio

1:1.618*



Also known as the golden mean, the golden ratio is considered an ideal proportion between two values such as height and width. It is commonly used in fields such as art, design and architecture.

Two values are considered to be in a golden ratio if their ratio to each other is the same as their sum is to the larger of the two.

An example is the golden rectangle, shown above right. Its height and width are in the golden ratio. When repeatedly divided by the golden ratio, each smaller rectangle stays within the golden ratio.

The concept of the golden ratio goes back to Classsical Greece, where Euclid first defined it, and where it was often applied to architecture.

*Like Pi, its actual value is infinite: 1:1.6180339887. . .

A is to **B** as **B** is to **C**.

> As the whole line is to the greater segment, so is the greater to the lesser.
>
> —*Euclid*

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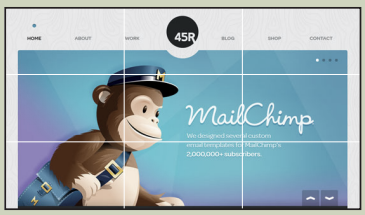
Rule of Thirds

The rule is simply to divide the frame into thirds vertically and horizontally, and to use the resulting grid to place elements within the frame. Important elements should be placed along the grid lines or at their points of intersection.

According to eye tracking studies, viewers are most likely to look first and longest at the upper left intersection of the grid, followed by the lower left, upper right and lower right.

Although most often applied to photographic composition, the rule of thirds can be useful in page and website design. An off-center dominant element is often an effective way to lead viewers into the page.



Images: Wikimedia Commons

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