

DESIGN

# Principles of Design

# What is Design

*Design* is the creation of a plan or convention for the construction of an object or a system. It may be an architectural blueprints, engineering drawings, business processes, circuit diagrams or sewing patterns. *Design* has different connotations in different fields



**Design is what links creativity and innovation. It shapes ideas to become practical and attractive propositions for users, clients or customers. Design may be described as creativity deployed to a specific end**

# Principles of Design



The **principles of design** describe the ways an artist use different elements of design in a composition. These ways or principles are

- Balance
- Rhythm
- Emphasis
- Contrast
- Movement
- Harmony
- Proportion and scale

# Principles of Design

## BALANCE

A sense of equilibrium.

When establishing balance consider visual weight created by size, color, texture and number of objects.

Balance is the concept of visual equilibrium, and relates to our physical sense of balance. It is a reconciliation of opposing forces in a composition that results in visual stability. Most successful compositions achieve balance in one of two ways: **symmetrically or asymmetrically.**



# Principles of Design

## BALANCE

**Symmetrical balance** can be described as having equal "weight" on equal sides of a centrally placed fulcrum. It may also be referred to as **formal balance**. When the elements are arranged equally on either side of a central axis, the result is **Bilateral symmetry**.

This axis may be horizontal or vertical. It is also possible to build formal balance by arranging elements equally around a central point , resulting in **radial symmetry**. This is called **Radial Balance**



# Principles of Design

BALANCE

**Symmetrical balance**



# Principles of Design

BALANCE

**Radial Balance / Biaxial Symmetry**

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# Principles of Design

## BALANCE

**Near Symmetry & Inverted Symmetry**

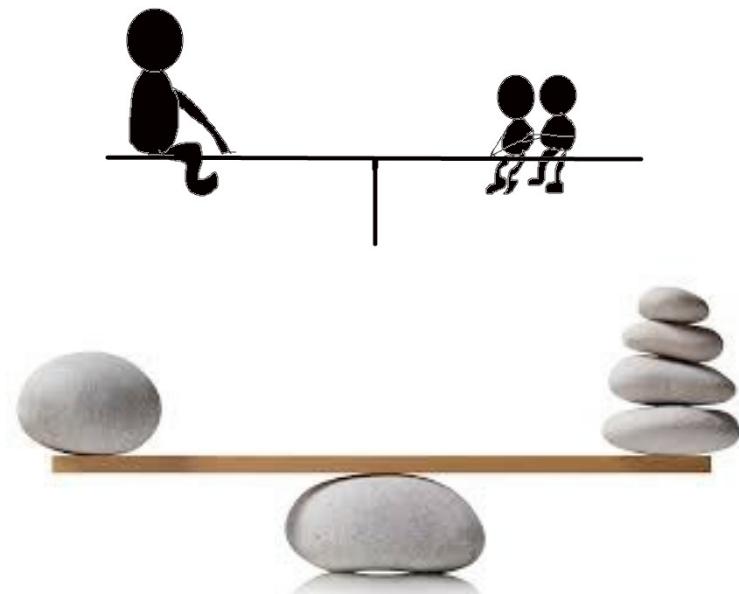


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## BALANCE

**Asymmetrical balance**, also called informal balance, is more complex and difficult to achieve. It involves placement of objects in a way that will allow objects of varying visual weight to balance one another around a central point.

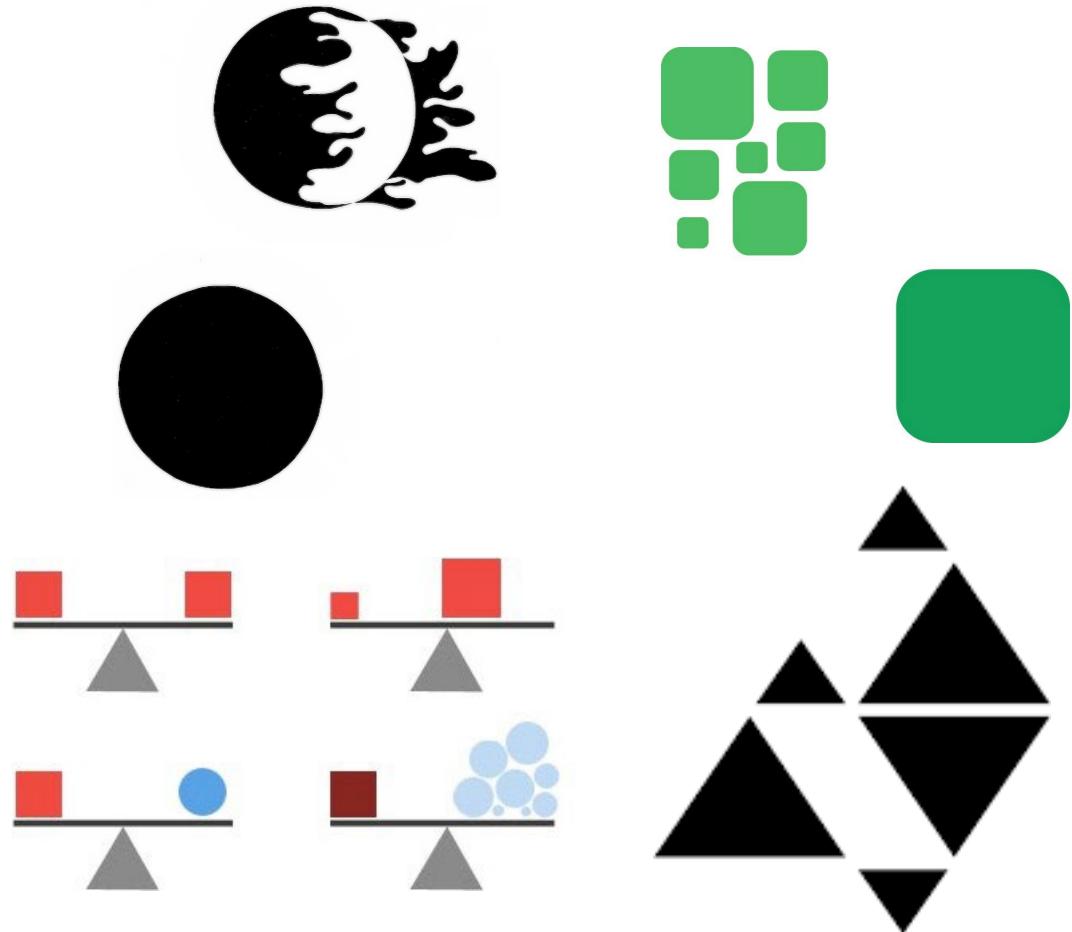
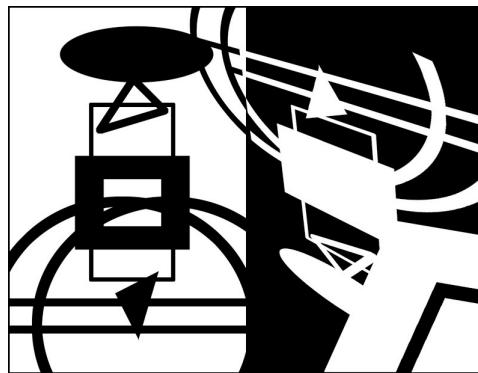
It just means that there are no mirror images in a composition. The term, however, is usually used to describe a kind of balance that does not rely on symmetry:



# Principles of Design

## BALANCE

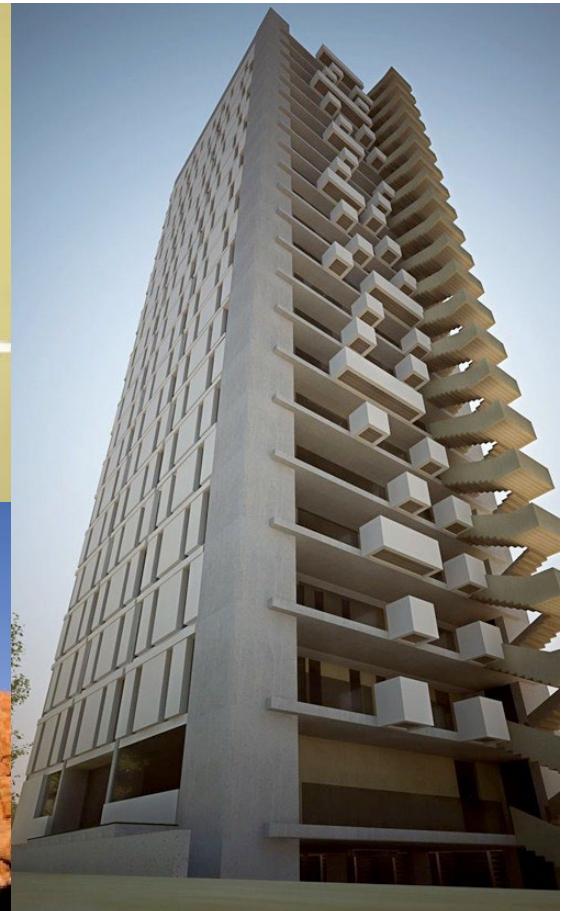
### Asymmetrical balance



# Principles of Design

## BALANCE

### Asymmetrical balance

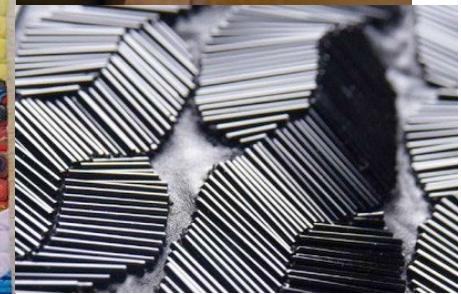


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## BALANCE

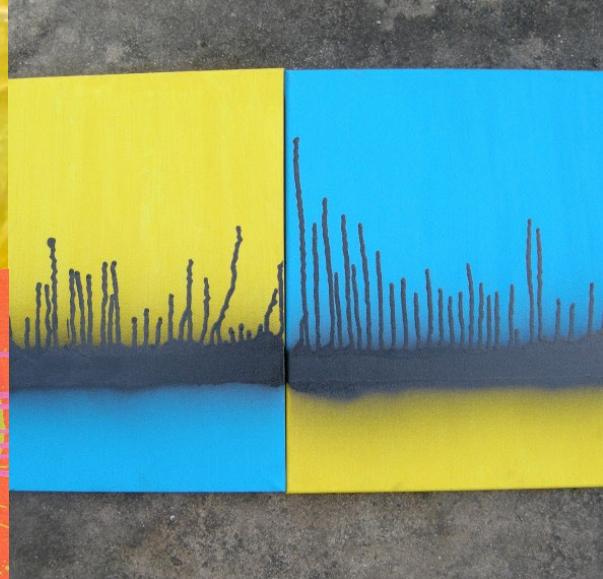
### Balance Using Texture



# Principles of Design

## BALANCE

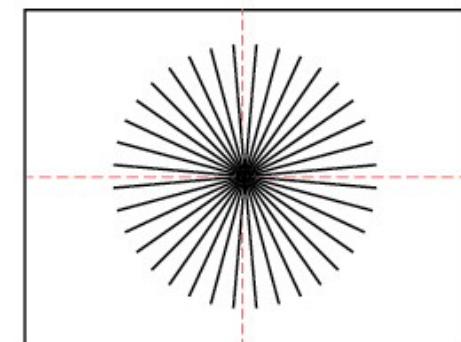
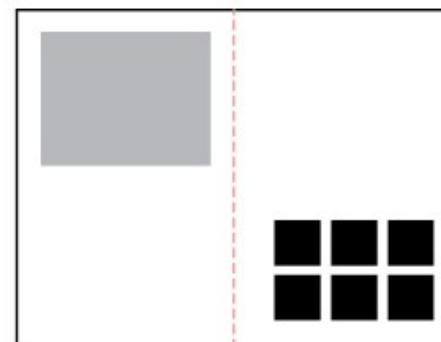
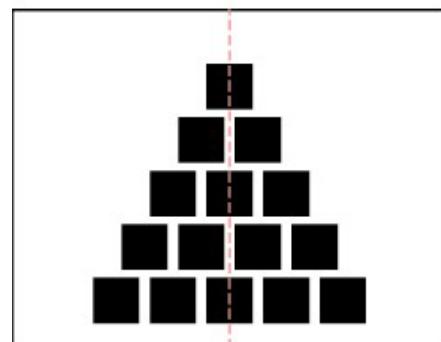
### Balance Using Colours



# Principles of Design

## BALANCE

### Balance Using Shapes



SYMMETRICAL BALANCE

ASYMMETRICAL BALANCE

RADIAL BALANCE



Hierarchy

Proximity

Contrast

Alignment

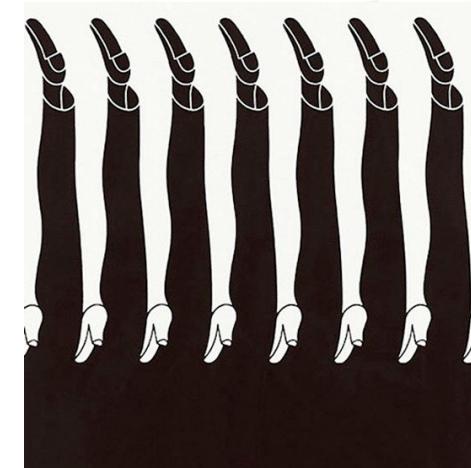
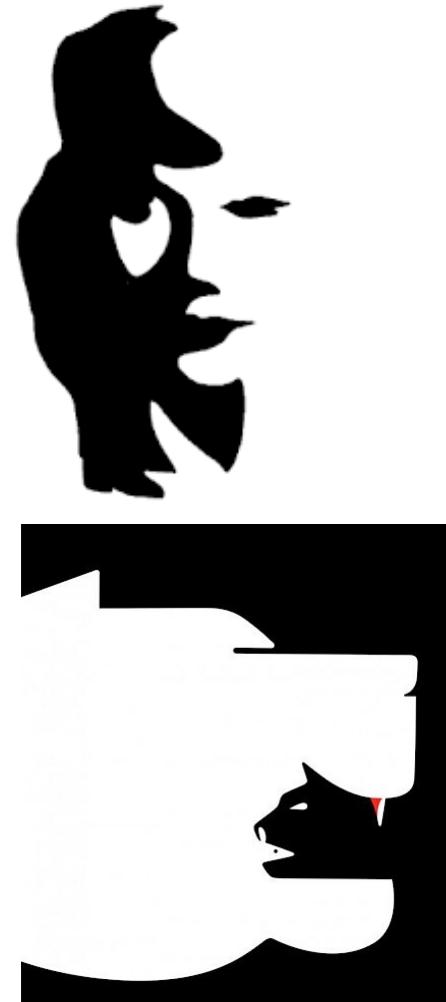
Repetition



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BALANCE

**Balance Using Space**



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## RHYTHM

A visual tempo or beat. The principle of design that refers to a regular *repetition* of elements of art to produce the look and feel of movement. It is often achieved through the careful placement of repeated components which invite the viewer's eye to jump rapidly or glide smoothly from one to the next.



Rhythm in architecture is the repetitive use of a group of visual elements, at least three times, to establish a recognizable "pattern." Simple examples of rhythm are the alternating window and column arrangement of most high rise office buildings. More complex rhythms make use of what in jazz music is called "counterpoint", that is, two or more intersecting or overlaid rhythms. This is seen frequently in classical architecture, where a series of columns and openings are overlaid on top of a series of smaller openings.

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## TYPE OF RHYTHM

Rhythm by Repetition      Rhythm by Gradation      Rhythm by Radiation  
Rhythm by Opposition      Rhythm by Transition



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## Rhythm By Repetition

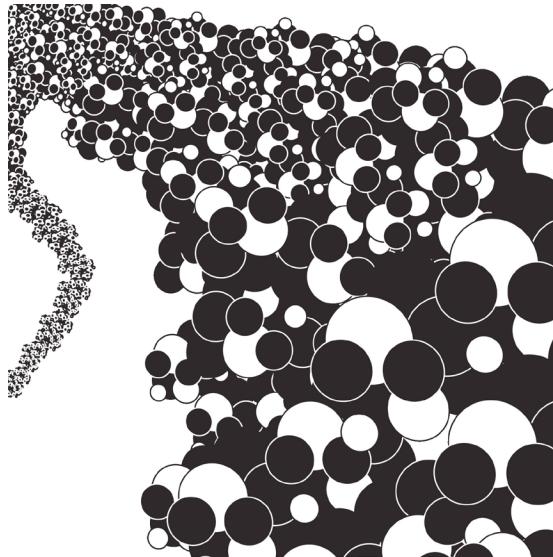
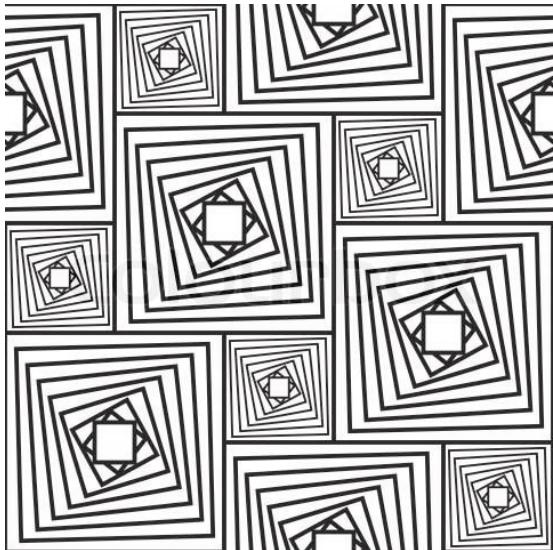
- Rhythm created by duplicating (repeating) shapes, colors, pattern, line, texture.
- Repeated Window panes, repeat. Stripes on wall and design and colour of glass.



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Rhythm By Repetition

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# Principles of Design

## Rhythm By Gradation



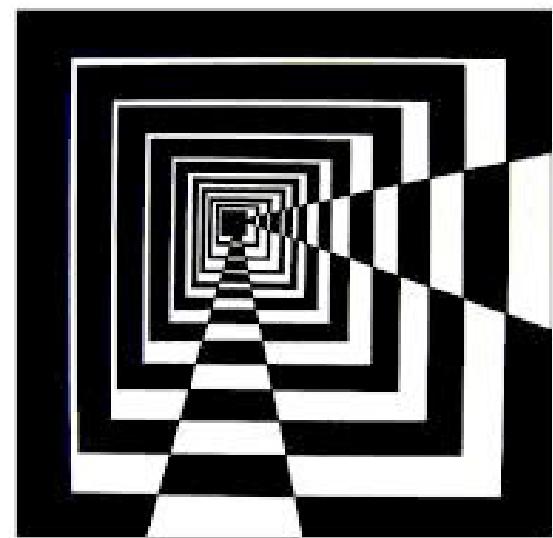
- Rhythm created by a gradual change in size or color.
- Carpet on the floor changes gradually in value.
- Gradation in lights. bellow



# Principles of Design

## Rhythm By Gradation

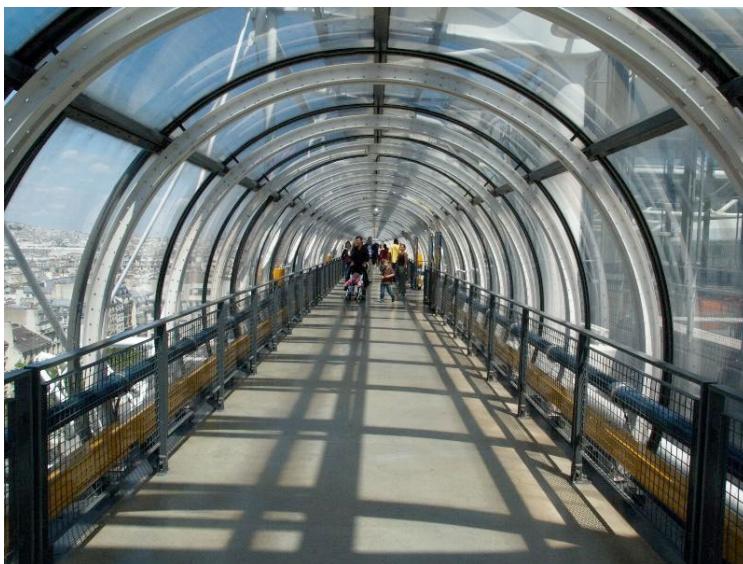
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## Rhythm By Radiation

- Rhythm created by identical objects coming from a central axis.
- The glass frames “radiate” from the center of the path.

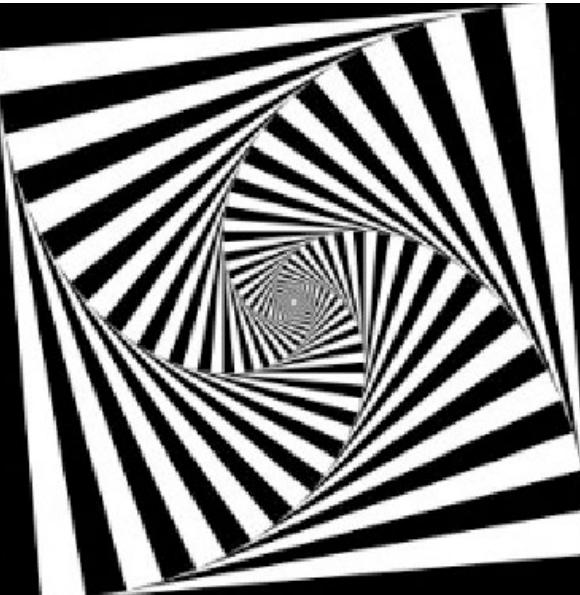


- The floor design, the windows, furnitures etc in radial rhythm

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Rhythm By Radiation

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## Rhythm By Opposition

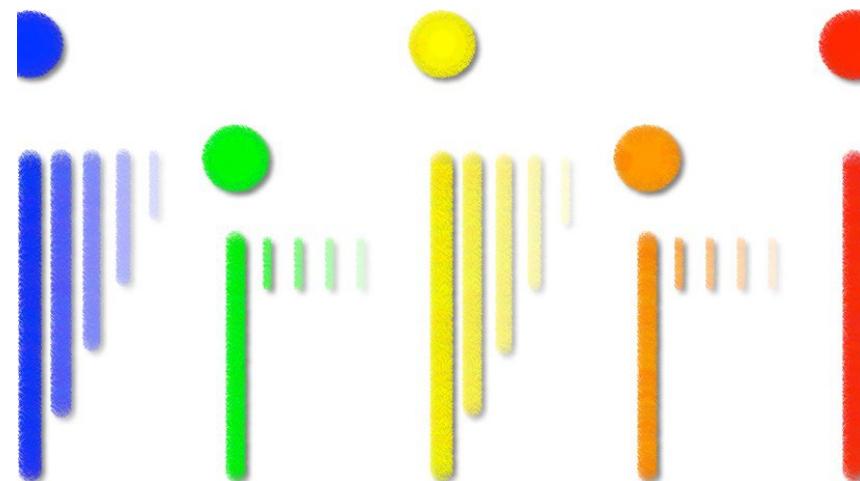


- Rhythm created direct placement of lines, shapes or colour to create opposition through abrupt visual change.
- Contrasting black and white tiles and the lines intersecting at right angles.

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## Rhythm By Opposition

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# Principles of Design

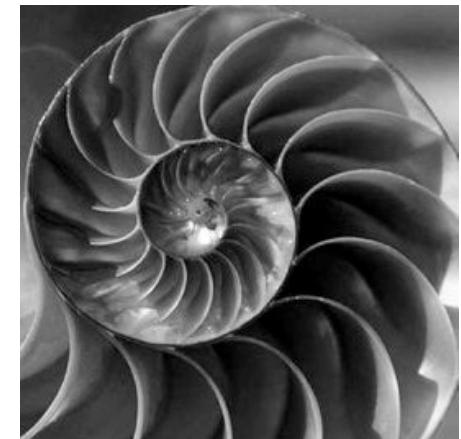
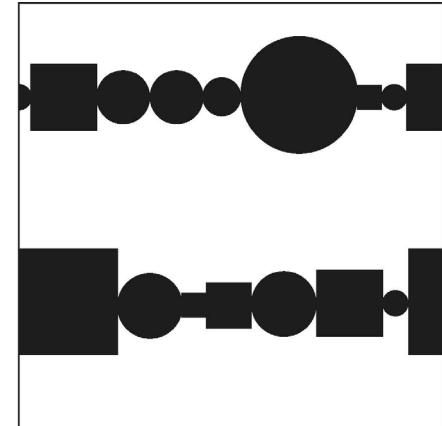
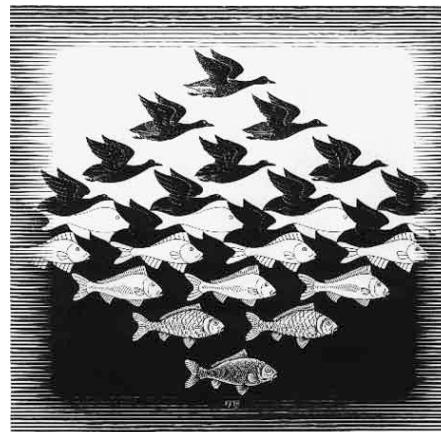
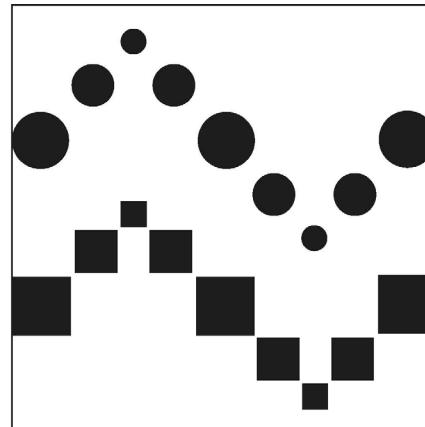
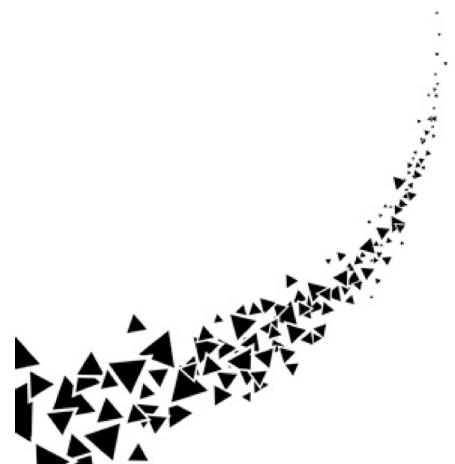
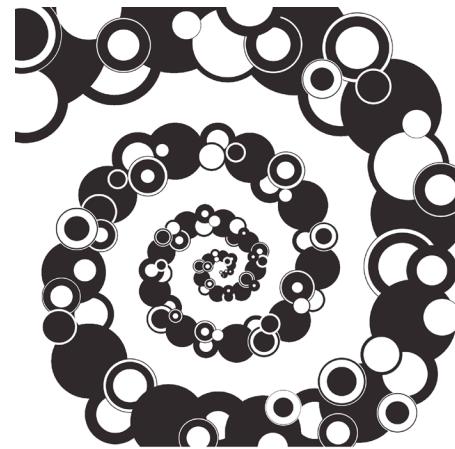
## Rhythm By Transition

- Rhythm created by curved lines that carry your eye across a straight surface.
- Window treatments that gently swag down, create a soft rhythm by transition.



# Principles of Design

## Rhythm By Transition



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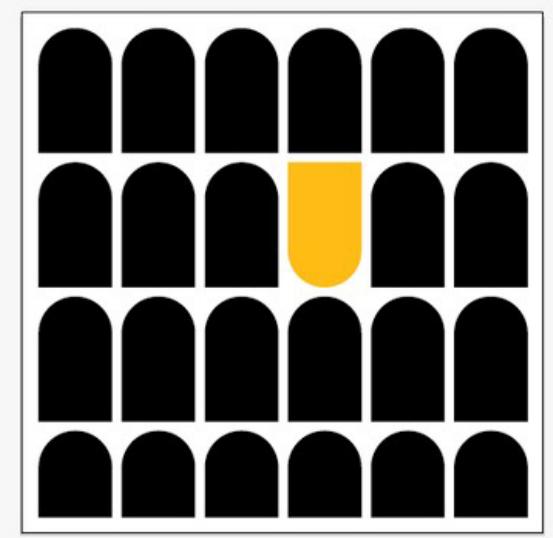
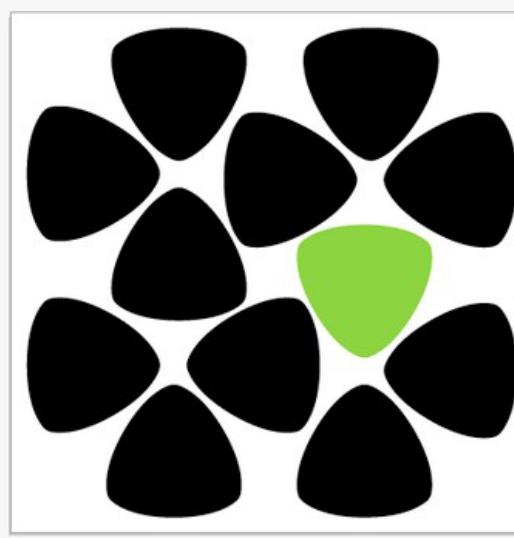
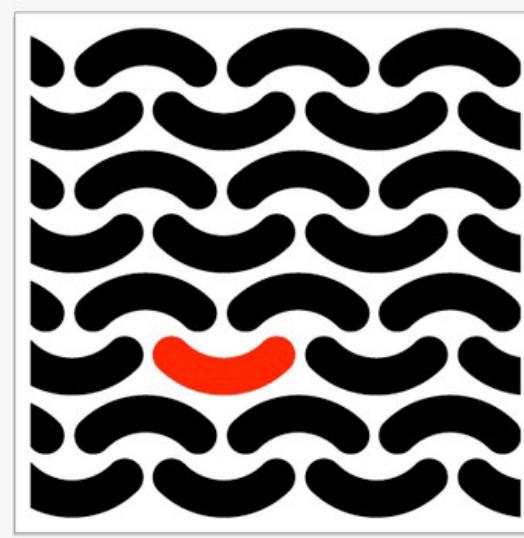
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## EMPHASIS

Emphasis creates a focal point in a design composition; it is how we bring attention to what is important in it.

It is the focus of attention and interest within a composition

In Architecture it is the feature that commands attention and makes a design visually interesting



# Principles of Design



## EMPHASIS

The main reason in using emphasis is to help you communicate the message that needs to be communicated. Emphasis helps readers determine the important information on your display and allows them to interpret the message faster. This process of arranging the visual elements on a composition according to their order of importance and emphasis is called Visual Hierarchy. Visual Hierarchy is used to guide readers attention to the main places on your composition.

You will read this  
before you read this.

# Principles of Design

How to Create Emphasis

## EMPHASIS

Make it bolder

Make it brighter

Change Style

Add special visual effects.

Add a border or frame

Add more negative or positive space

Add shadow or lights

Change the color

Change the position

Create Focal Points



It is the function of

**ART**

to renew our perception.

**What we are  
familiar  
with we cease to see.**

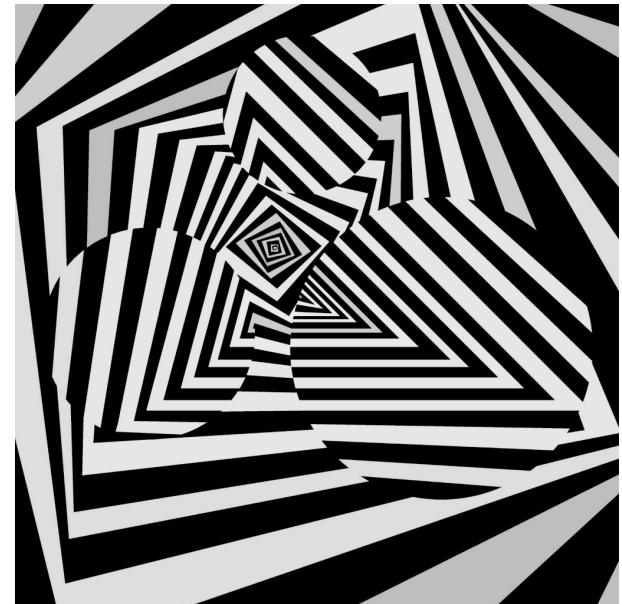
# Principles of Design

## Guidelines for Creating Emphasis



The point of emphasis should command attention, but not dominate the overall design.

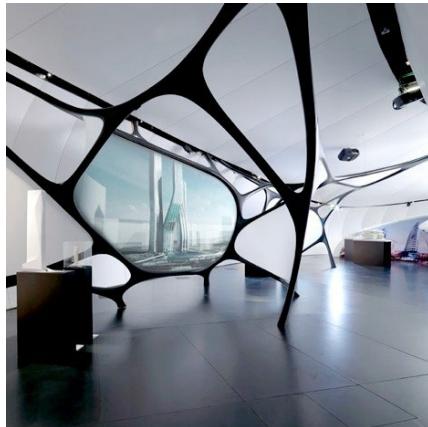
Other features within the composition should not compete for the emphasis or contrast.



# Principles of Design

## EMPHASIS In Architecture

Zaha Hadid  
Architects

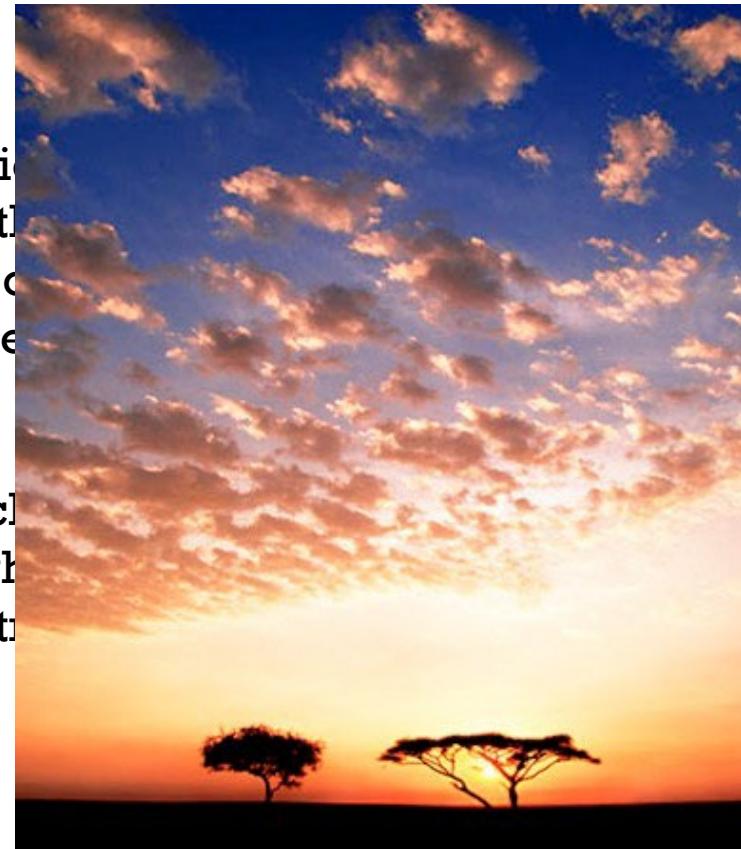


# Principles of Design

## Contrast (variety)

Contrast is simply defined as difference. Difference between elements or subjects within a work of art or composition. Contrast can be created through variety within the elements of art. (i.e. value, color, texture) Contrast can be used to create a focal point or area of interest in an artwork.

Contrast is closely related with variety which is also considered as principle of design. Although purist, stick with variety and argue that contrast creates variety.



# Principles of Design

## Contrast (variety)

it is easy to understand how colour can create contrast. For example, complementary colours provide a high level of contrast. Complementary colours are colours that are located directly across from each other on the colour wheel. Red and green, blue and orange, and purple and yellow are all examples of this. But when using complementary colours, we also have to consider value. Value is the darkness or lightness of colour. Without contrast in value, the contrast created by complementary colours is counter-productive. Notice how the red and green vibrate off of each other. The result is aesthetically horrid. The problem lies in the use of value. There needs to be contrast in value along with the contrast in colour. If we change the values, not the colours, the result is more successful

**CONTRAST**

**CONTRAST**

# Principles of Design

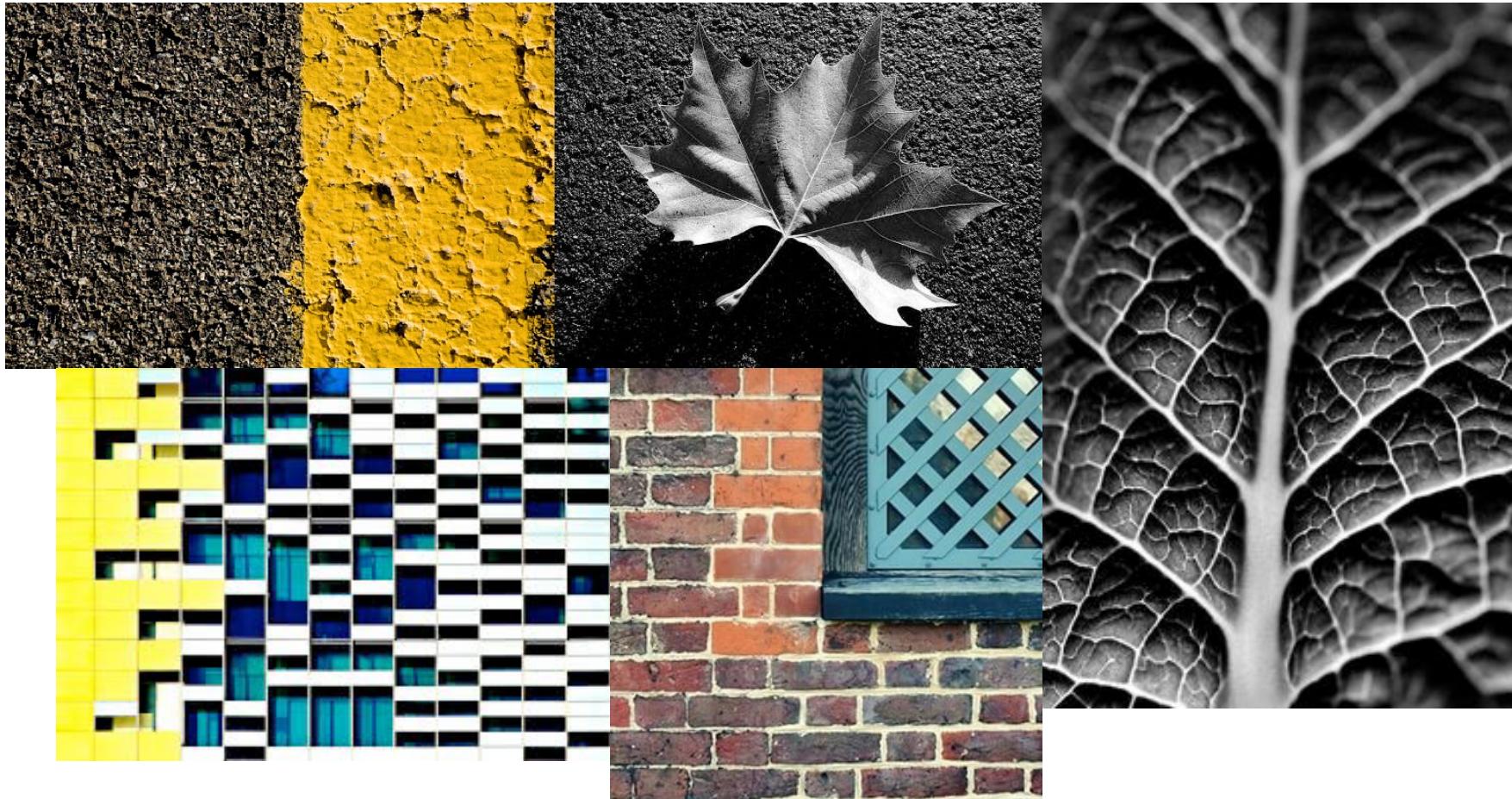
Contrast (variety) in Colour



# Principles of Design

Contrast (variety) in Texture

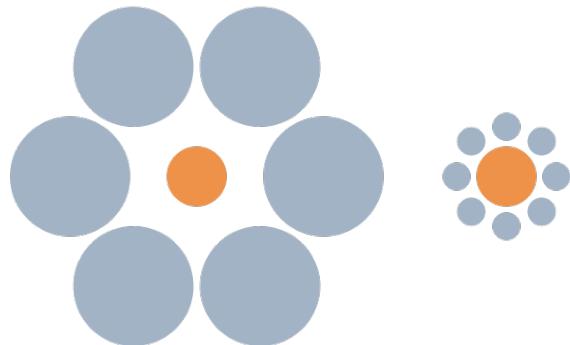
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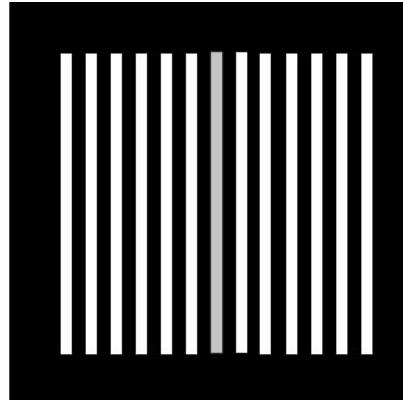
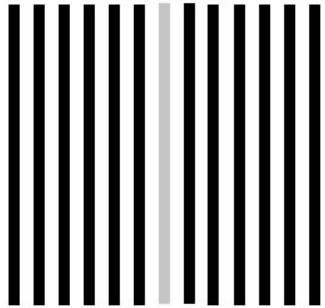
Contrast (variety) in Size & Shape



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Contrast (variety) in Space

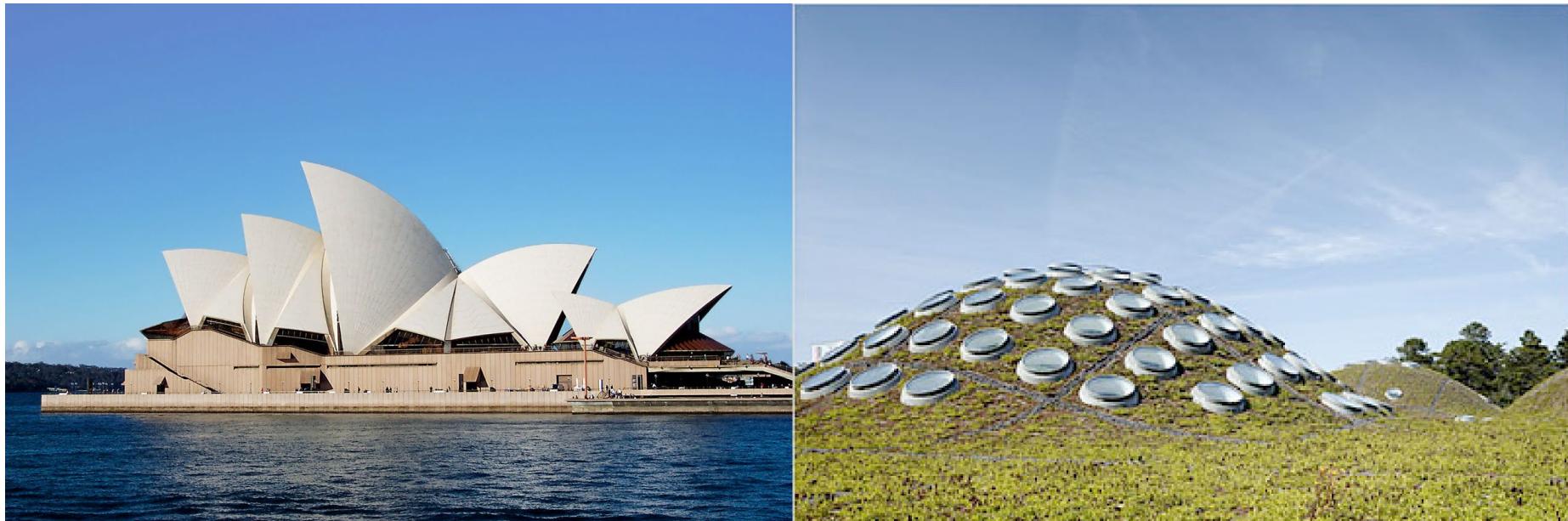


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## Movement

**Movement** is the visual flow of your Design. It's the path that you intend your viewer's eye to follow. You can create this by purposefully placing art elements in a way that creates a path for the eye to follow



# Principles of Design

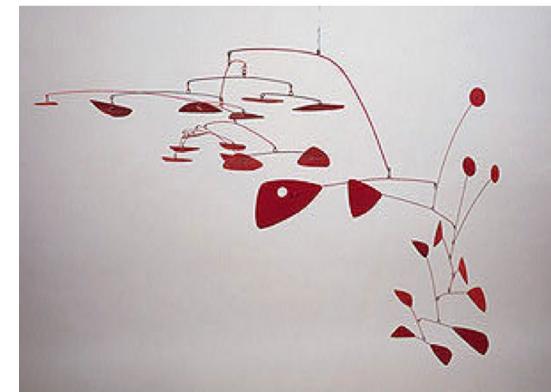
## Movement

Is a visual flow through the composition. It can be the suggestion of motion in a design as you move from object to object by way of placement and position. Directional movement can be created with a value pattern. It is with the placement of dark and light areas that you can move your attention through the format

An art work may incorporate *actual motion*; that is, the artwork itself moves in some way. Or it may incorporate the illusion of, or *implied movement*.

Art that moves through the effect of natural properties, either its own inherent properties or their effect, is unpredictable. Spatial relationships within the work change continuously, with endless possibilities. One of the delights of experiencing such artwork is the element of change and surprise. It's as if every time we look at it we are seeing a new artwork.

Alexander Calder



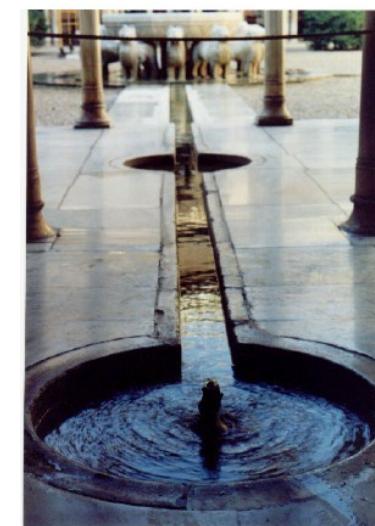
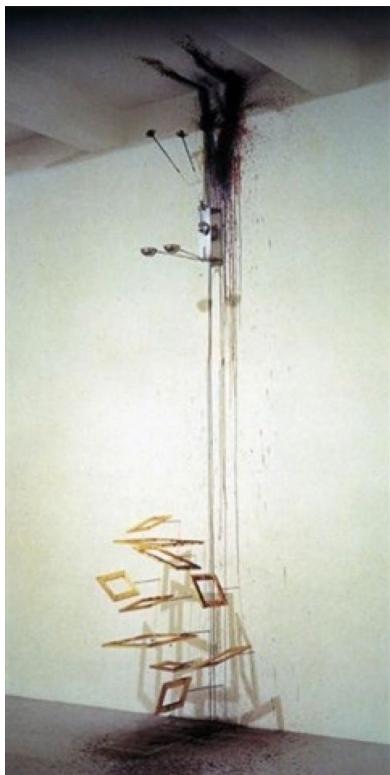
Alexander Calder, *Sumac II*, 1952 Sheet metal, wire, and paint 29 1/4" x 48" x 35"

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## Movement

Rebecca Horn



Court of the Lions, The Alhambra, Grenada, Spain

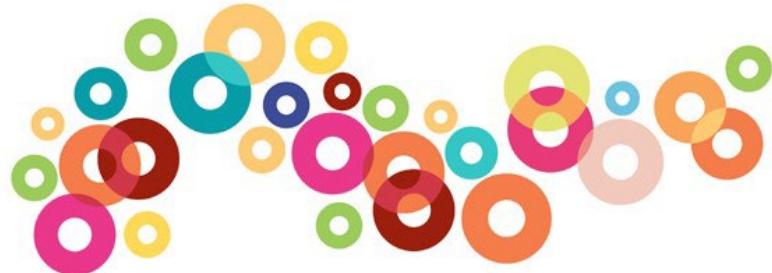
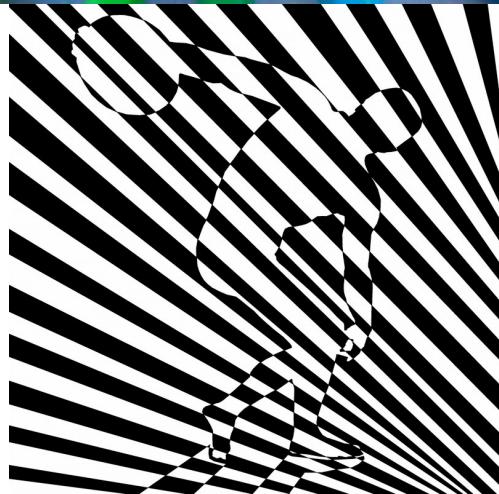
Rebecca Horn Painting Machine 1988

The Alhambra is a massive complex in southern Spain built by Moors during the 14th century. Its function was two fold: as a fortress for protection and defense, and as a palace for relaxation and luxurious refreshment. Southern Spain is dry and hot, and one of the delightful and remarkable aspects of the Alhambra is that water flows throughout the whole complex in surprising and ingenious ways. All of this was engineered using forces of nature and the qualities of how water moves. Around every corner, in gardens and courts and staircases the water flows. It bestows a profound sense of renewal and rest.

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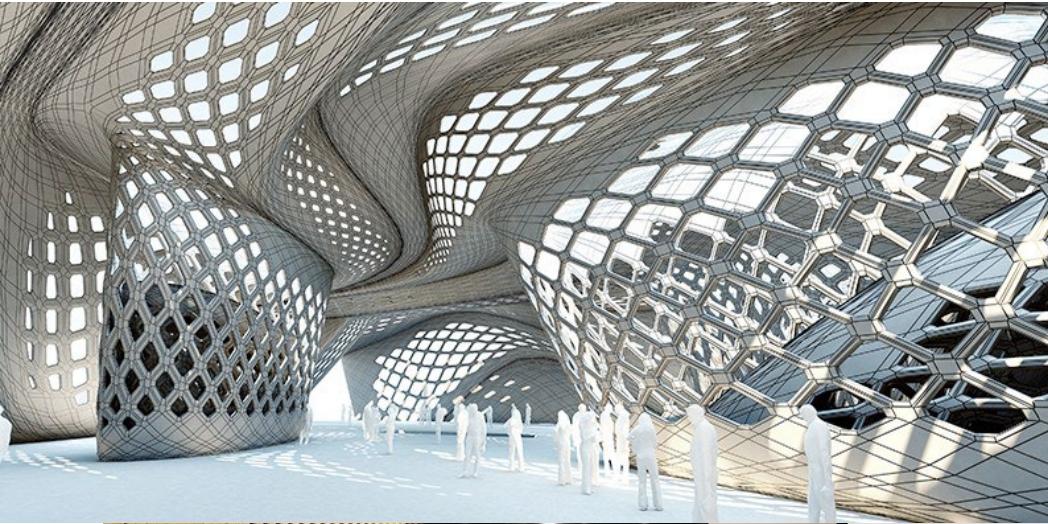
## Movement Patterns



# Principles of Design

## Movement in Architecture

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# Principles of Design

## Harmony

**Harmony** in visual **design means** all parts of the visual image relate to and complement each other. **Harmony** pulls the pieces of a visual image together. **Harmony** can be achieved through repetition and **rhythm**

- There are 2 types of harmony.
  - Unity
  - Variety



# Principles of Design

## Harmony By Unity

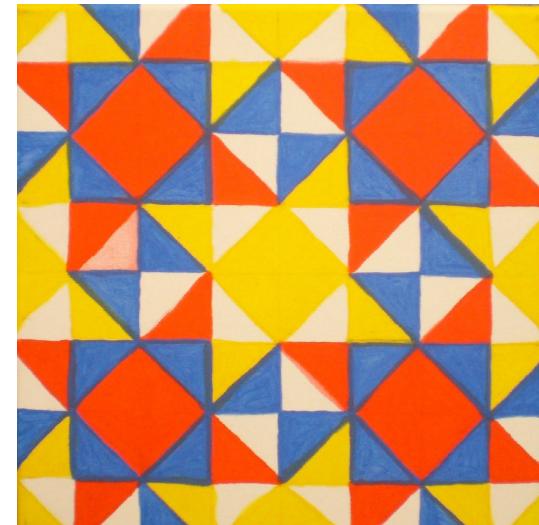
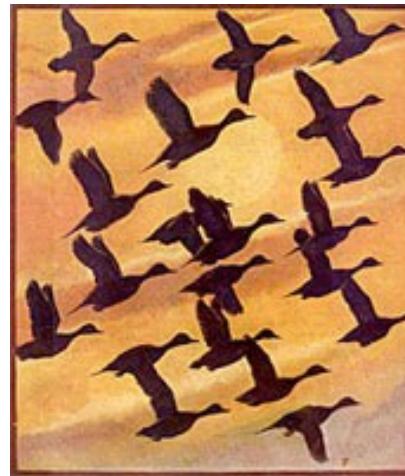
- Unity occurs when all the parts of a design or composition are related by one idea.
- A unified design has consistency of style



# Principles of Design

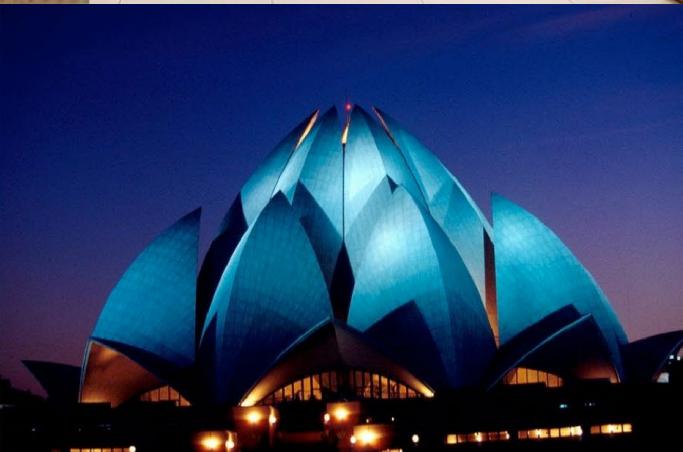
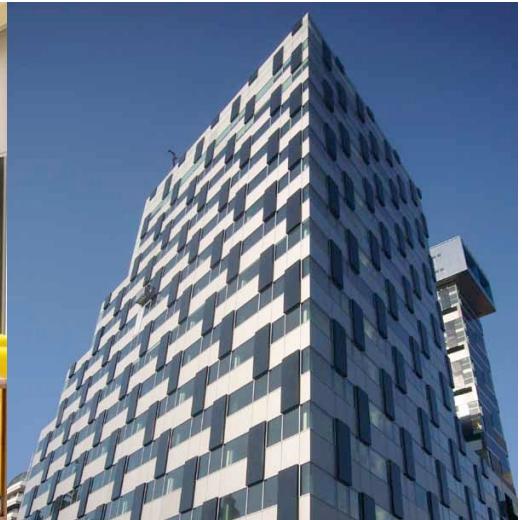
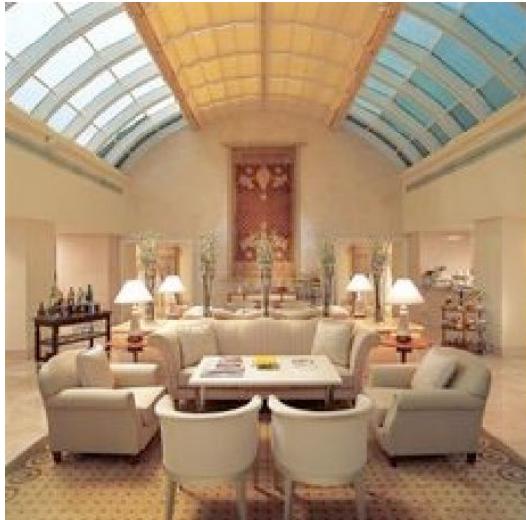
## Harmony By Unity

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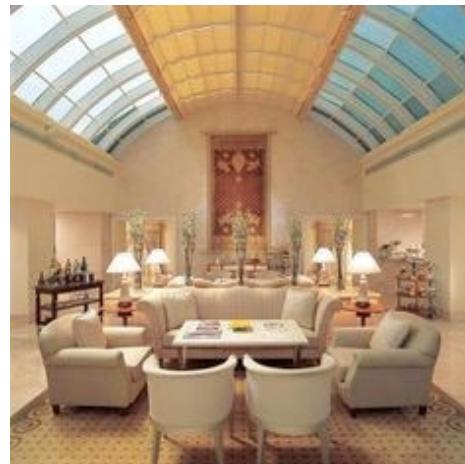
## Harmony By Unity



# Principles of Design

## Harmony By Variety

- When multiple elements of design are used to add interest to a design.
- Variety can be created using different elements and materials, as long as they are compatible to each other.



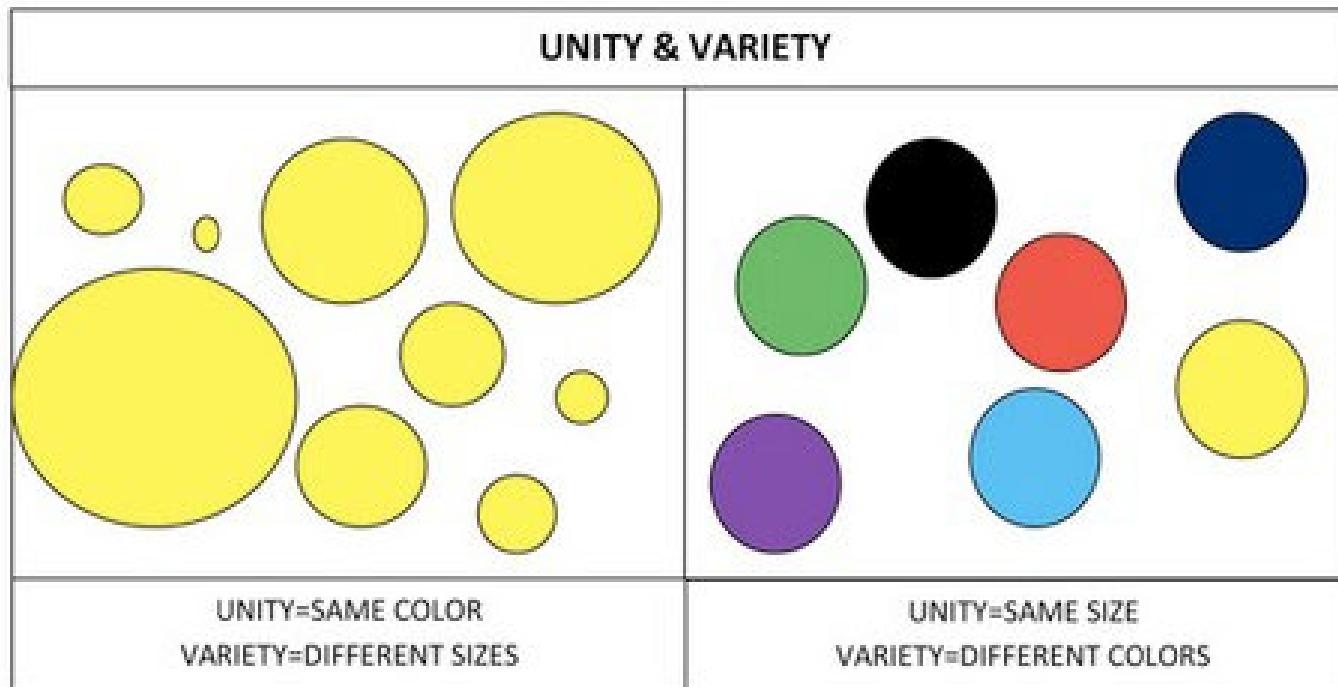
**Unity Vs Variety**

# Principles of Design

## Harmony By Variety

Harmony Is achieved when unity and variety are effectively combined.

- Carrying variety too far creates confusion.
- A lack of unity may make a space smaller.



# Principles of Design

## Harmony By Variety



# Principles of Design

## Harmony By Variety

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## Proportions & Scales

**Scale** refers to the size of an object (a whole) in relationship to another object (another whole). In art the size relationship between an object and the human body is significant. In experiencing the **scale** of an artwork we tend to compare its size to the size of our own bodies.



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# Principles of Design

## Proportions & Scales

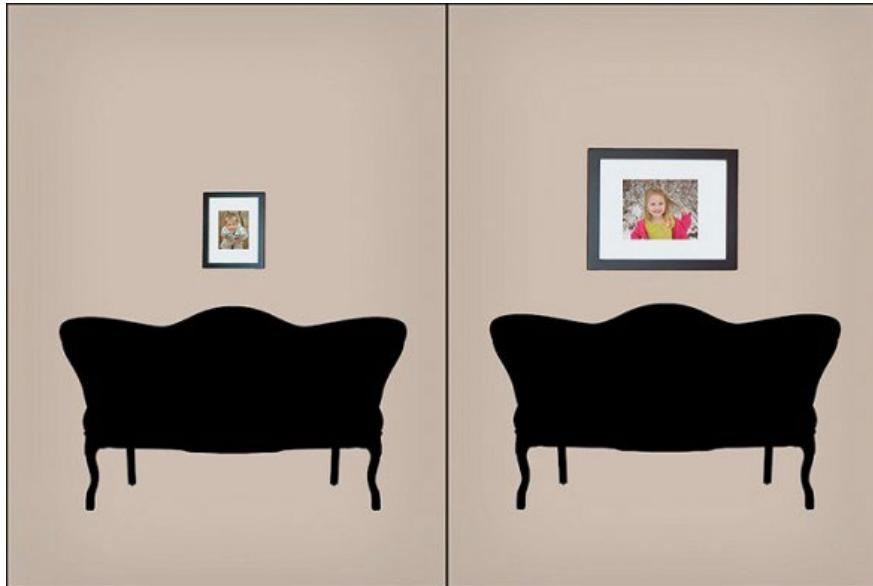
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Scale relates to the size of a design in relation to the height and width of the area in which it is placed

# Principles of Design

## Proportions & Scales



Placement of objects determine the size when compared to each other or in other words we evaluate the size from the objects surrounded by objects.

# Principles of Design

## Proportions & Scales



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# Principles of Design

## Proportions & Scales

- Relates to the actual and relative size and visual weight of the design and its components.
- Furniture and accessories must be in scale to the room

GOOD SCALE



BAD SCALE



# Principles of Design

## Proportions & Scales



- This chair's massive scale diminishes everything around it.
- The chair's light palate accentuates its skinny scale.
- This club chair matches the scale of the sofa.

# Principles of Design

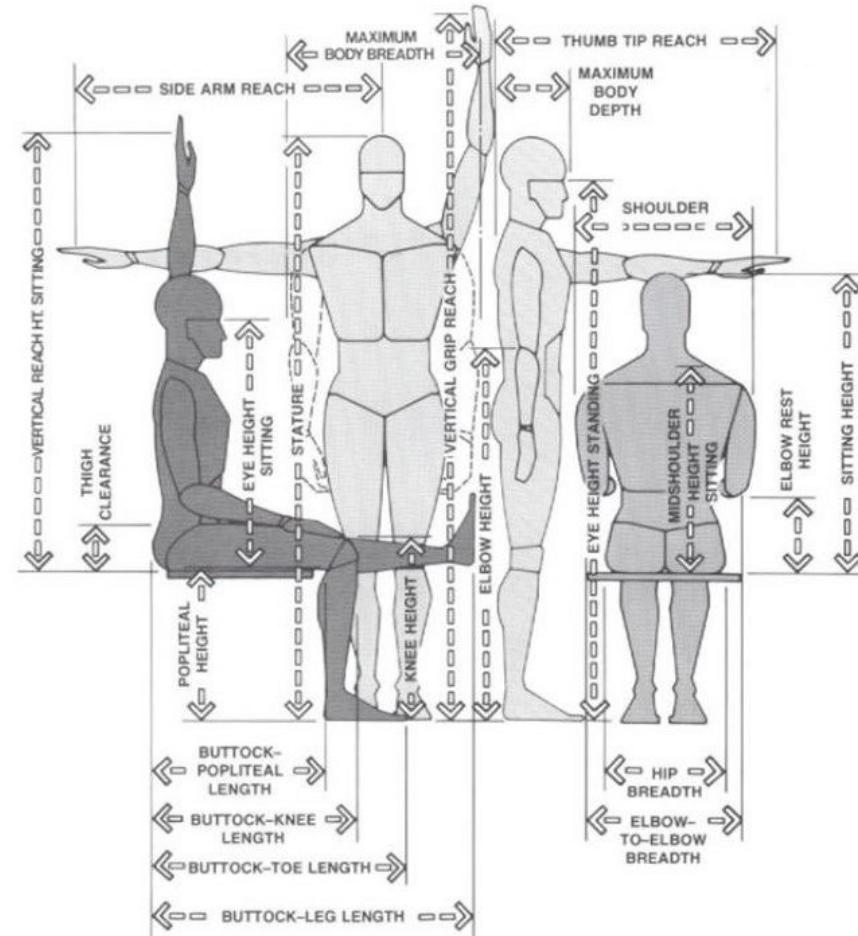
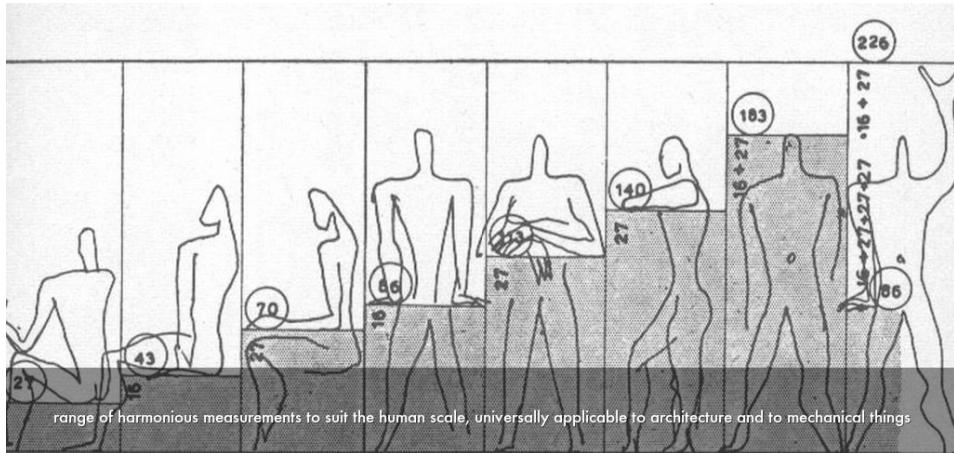
## Proportions & Scales



- Center table is over-scaled for the sofa.
- Table not only looks out of scale, it functions poorly as well.
- The table is substantial enough to anchor the furniture grouping, yet it leaves room for traffic flow around both ends.

# Principles of Design

## Proportions & Scales



Scale is very much associated with **ergonomics** when used in the field of architecture. The space designed for human being is closely related size of body parts and its function.

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### Origins of Measurements

In ancient times, the body ruled when it came to measuring. The length of a foot, the width of a finger, and the distance of a step were all accepted measurements.

**Inch:** At first an inch was the width of a man's thumb. In the 14th century, King Edward II of England ruled that 1 inch equalled 3 grains of barley placed end to end lengthwise.

**Hand:** A hand was approximately 5 inches or 5 digits (fingers) across. Today, a hand is 4 inches and is used to measure horses (from the ground to the horse's withers, or shoulder).

**Span:** A span was the length of the hand stretched out, about 9 inches.

**Foot:** In ancient times, the foot was  $11\frac{1}{4}$  inches. Today it is 12 inches, the length of the average man's foot.

**Yard:** A yard was originally the length of a man's belt or girdle, as it was called. In the 12th century, King Henry I of England fixed the yard as the distance from his nose to the thumb of his out-stretched arm. Today it is 36 inches.

**Cubit:** In ancient Egypt, a cubit was the distance from the elbow to the fingertips.

Today a cubit is about 18 inches.

# The Golden Mean Rule



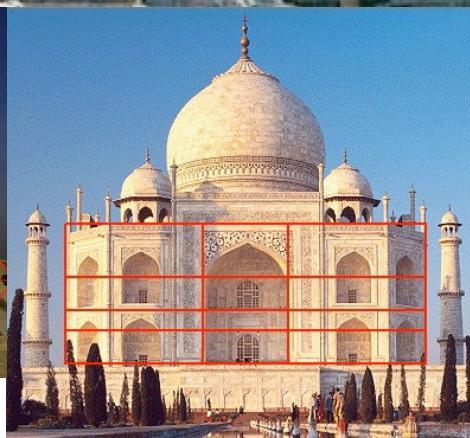
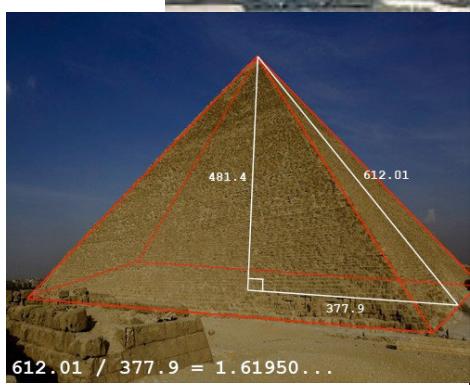
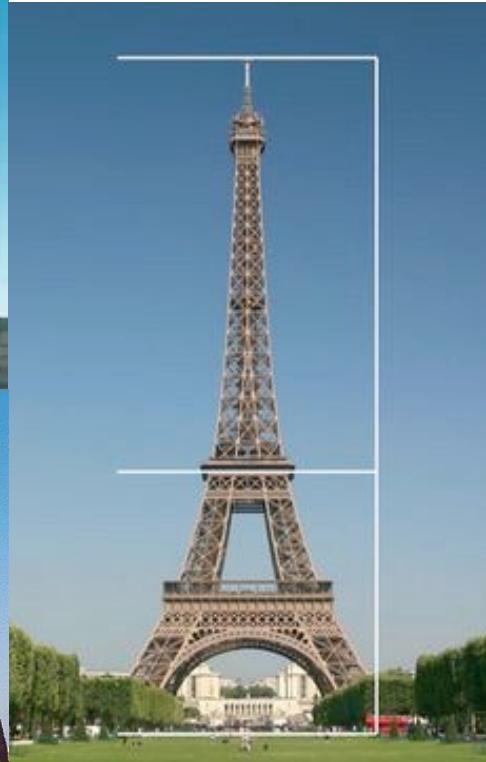
The Golden Mean Rule, also known as the Golden Ratio or Phi ( $\Phi$ ), is a fundamental principle in composition and design. It is a mathematical ratio approximately equal to 1.618, often symbolized by the Greek letter  $\Phi$ . This rule suggests that dividing a line or space into two parts, where the ratio of the whole to the larger part is the same as the ratio of the larger part to the smaller part, results in aesthetically pleasing proportions. Artists, architects, and designers have utilized the Golden Mean Rule for centuries to create visually balanced and harmonious compositions in various forms, from paintings and sculptures to architecture and graphic design. This concept is a timeless tool for achieving balance and beauty in art and design.

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## Proportions & Scales **Analysis**

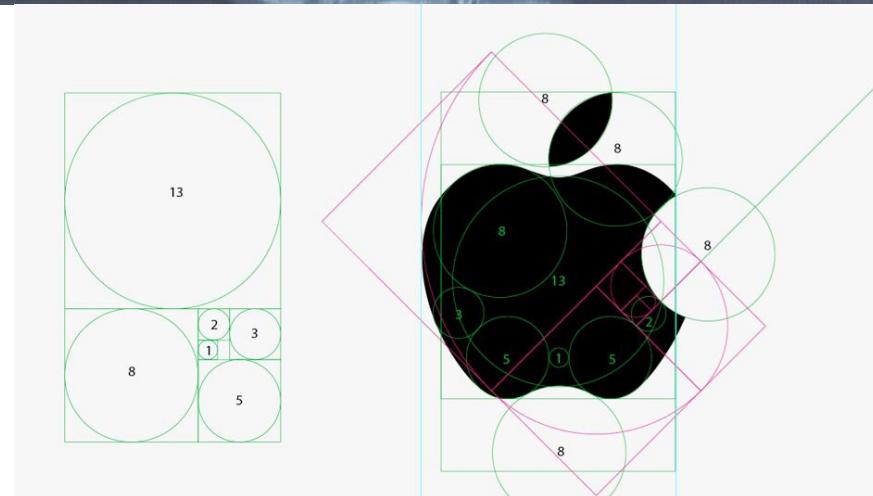
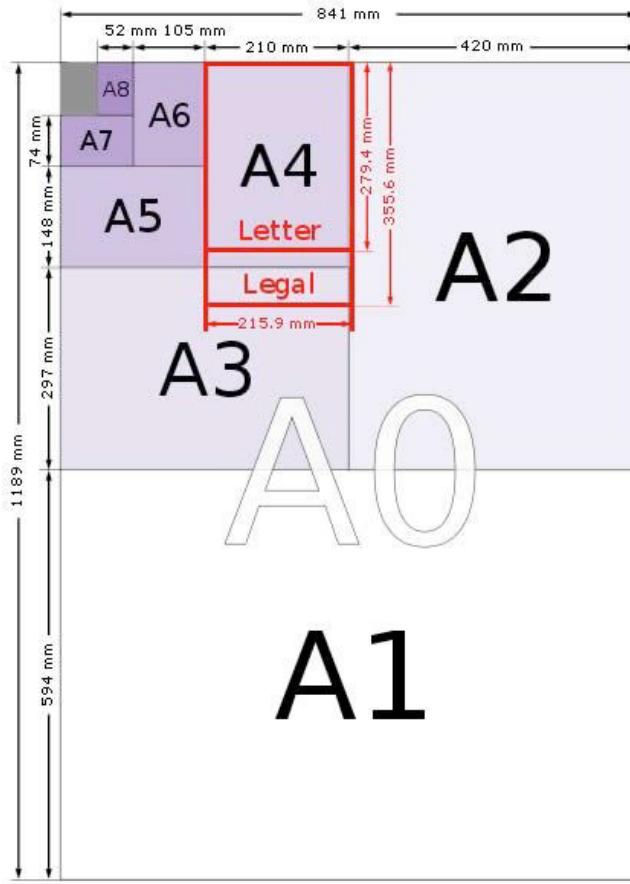
### Golden Ratio in Architecture



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## Proportions & Scales **Analysis**

Some common Day today things in Golden Ratio

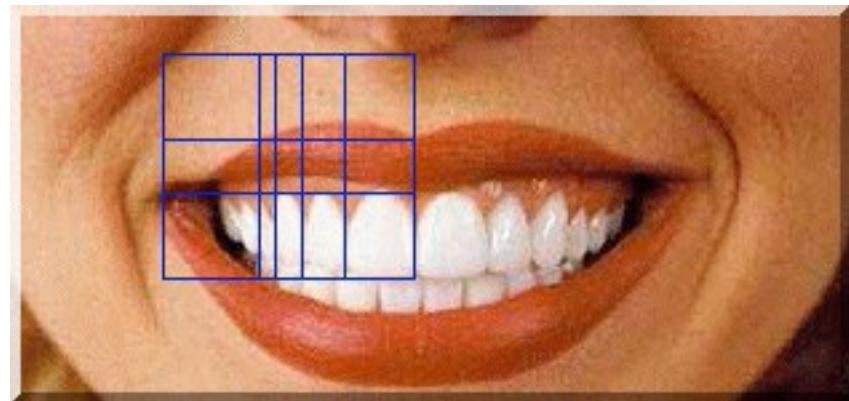
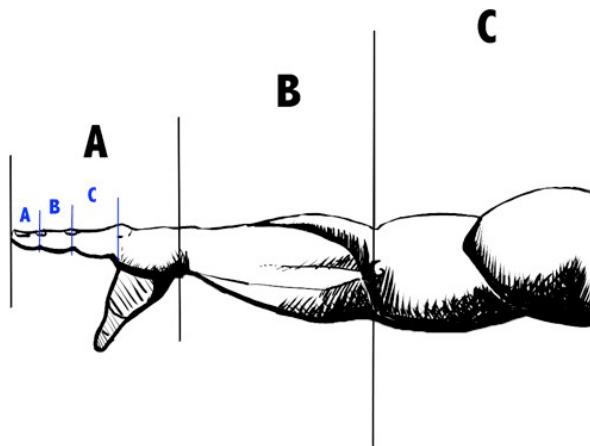
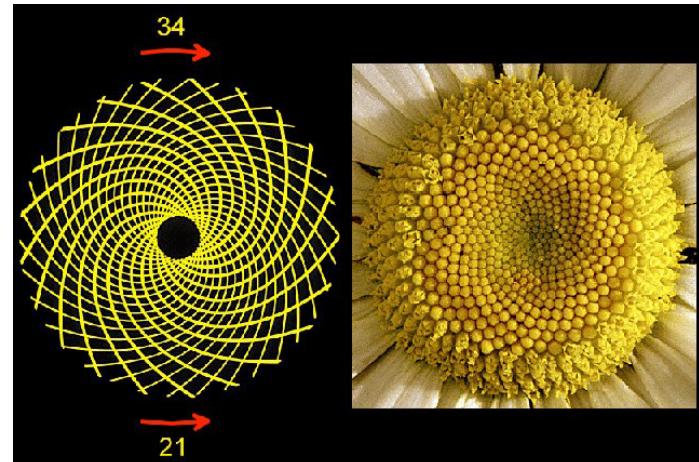
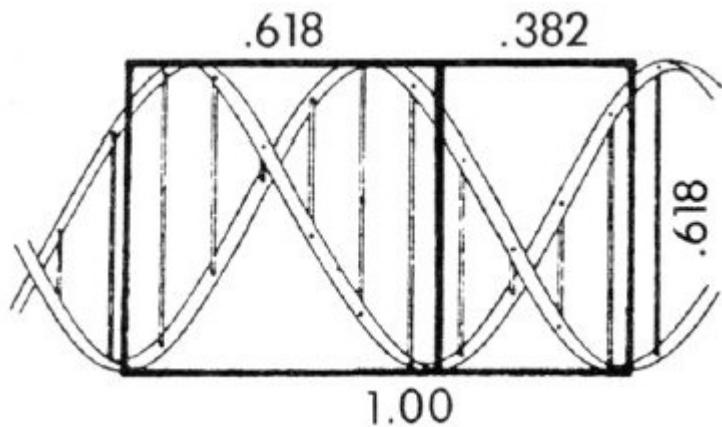


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## Proportions & Scales **Analysis**

Some common Day today things in Golden Ratio



# Thank You

  
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