2.4 Attributes of colour

One of the problems when speaking about a colour is to agree on its name. We often use expressions like salmon-pink, apple-green, etc. Every manufacturer uses different terminologies: olive green paint, metallic red for cars, beige for clothes, etc.

The most accurate definition of a colour is based on its description. This refers to the colour's attributes: its hue, value and saturation.

A. Hue

This is the name every colour has (red hue, green hue, etc.) and we use it to describe the colour pigments that form it. So, the best way to describe less familiar colours is by defining the hues in its mixture: reddish yellow, reddish blue, purplish green, etc. It is easier to understand a colour if you first think of the colours that make up the hue.

B. Value

This attribute specifies the degree of a hue's lightness. To define a hue's value, we must think about how much black or white pigment is in the mixture (more white = higher value). To describe a colour's value we must decide how light or dark the hue is. Yellow and cyan are hues with a different sense of value; and yet, neither has white or black in the mixture. We call this attribute the pure value of a hue.

C. Saturation

Saturation is the degree of a colour's purity. It refers to the number of colours and greys that make it. Colours with higher pure values are those with fewer components in their mixtures. The basic colours (primary and secondary colour pigments) are the most saturated hues.

The least saturated hues are those that have a greyish look to them. They are the result of having more than two differently proportioned hues, as well as an amount of grey (white + black) in their mixture.

In order not to confuse this attribute with a colour's hue or value, you can try to answer the question: How is this hue obtained? Less mixed means more saturated.

2.5 Colour harmony

One way to apply colour harmony to painting is to use a range of colours that take into account balance, proportion and rhythm.

A. Balance

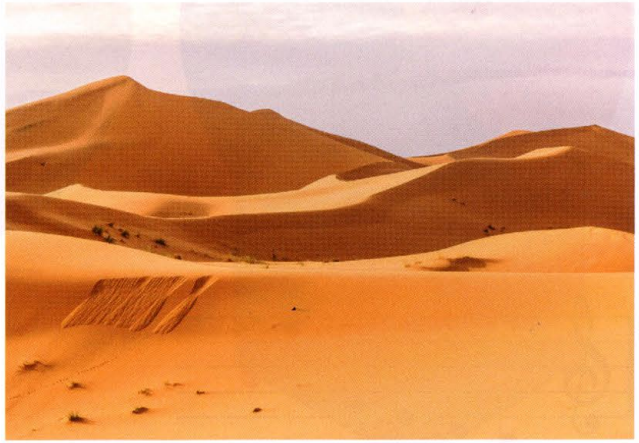
Balance depends on the number and size of coloured areas. A large area of colour is more eye-catching than a small one, so it should be in a less saturated colour than a smaller area.

B. Proportion

The proportion or amount of a colour in an image makes colour contrasts softer. A jungle image has a lot of cyan mixed in to make green tones.

C. Rhythm

Rhythm means using colour in a certain repeated order that makes the eye move smoothly, or even jump, from one colour to the next, giving a feeling of rhythm or movement.



Look at the colour harmony found in nature.

Space and depth

Throughout history, humans have drawn space and the objects in it on the basis of our visual experience.

Everything around us – streets, parks, our homes – and the things we find in these spaces – people, objects, furniture, cars – are three-dimensional: They have shape, texture, colour and volume. We see them in different sizes, whether that is because some are closer than others or because they really are smaller or larger.

3.1 Representing spaces and objects

People have used a range of resources to represent spaces and objects, enabling us to convey the illusion of three dimensions on a two-dimensional support, such as paper, canvas or a wall.

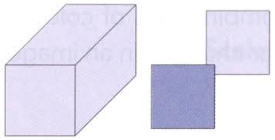
Such procedures are based on visual experience and the principles of perspective, which you will study in the next section of this book.

A. Oblique perspective

This technique consists of using oblique parallel lines to draw shapes and objects, giving them a sensation of depth in space.

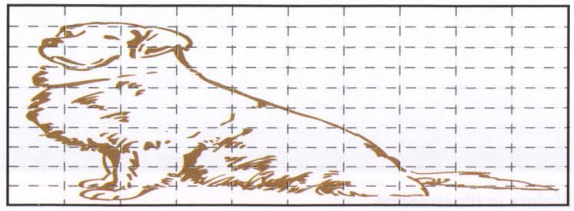
PABLO RUIZ PICASSO, *BREAD AND FRUIT DISH ON A TABLE*, 1909.

This method of representation has been used for centuries. Picasso, for example, used this technique to represent the shapes in his painting *Bread and Fruit Dish on a Table*. This allows us to quickly understand his idea of space and volume.



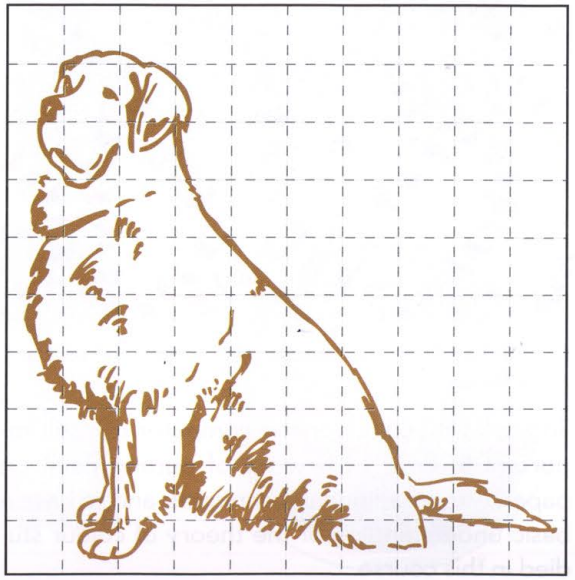
B. Distortion through anamorphosis

This is the temporary distortion of an image produced by an optical or mathematical effect. In art, this effect has been used to attract attention to the artwork's message or to create spatial illusions. To use this effect, you can start with a drawing on a grid, and then recreate the drawing on a distorted grid.



YOUR TURN

4. Have a go at using this technique with an image that you like. Draw a grid over the image. Copy the image onto a rectangular grid with the same number of rectangles as the original grid on your image. When it is finished, find the point of view where it does not appear to be distorted. If you are working in groups and drawing on the floor, use coloured chalk or the technique recommended by your teacher. You will create a really fun example of anamorphosis.



C. Size of figures

This technique consists of giving shapes a sense of depth by making them gradually bigger or smaller.

Antonio López, *Street of Santa Rita*, 1961. In this painting you can see how the artist tries to achieve a feeling of three-dimensional space. He has achieved this by gradually making the houses on both sides of the street smaller. The ones in the foreground are bigger and they get smaller to suggest being further away.

D. Colour of shapes and spaces

Another technique for creating a sense of depth is by the use of colour: More intense or contrasting colours seem closer and paler or light colours seem further away.

Edward Hopper, *Queensborough Bridge*, 1913. Observe how this 20th century American painter used this technique in this painting. Space is represented through the contrasts of colour in the landscape.

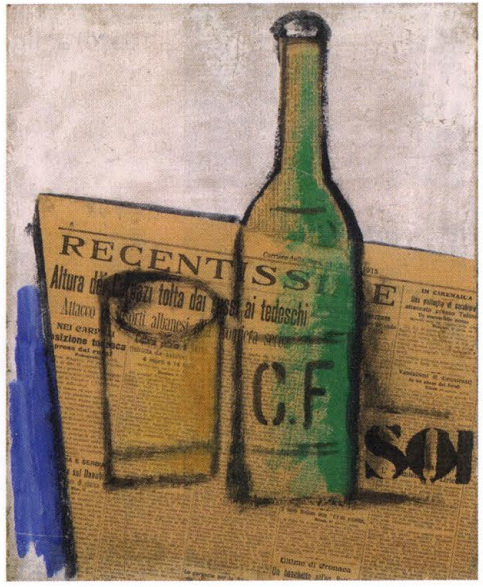
E. Overlapping

This is another technique that is used to create depth in two-dimensional images. Overlapping shapes on top of each other can enhance and complement the use of oblique perspective.

Joaquín Sorolla, *Valencian fisherwomen*, 1903. You can easily see in this painting how the painter overlapped the women's bodies to get a sense of depth. He increases this feeling by also using oblique perspective. If we draw an imaginary line along the tops of the women's heads and another along the bottoms of their skirts (next to the baskets of fish), we can see Sorolla placed the women in this painting in such a way that they form oblique parallel lines.

F. Transparency

Overlapping is used together with the technique of transparency, in which shapes that are blurred or out-of-focus seem further away from us.



Ardengo Soffici, *Bottle and Glass or Bottle and Newspaper*, 20th Century. Notice how this Italian painter used the technique of transparency. By superimposing the frame onto the blurred shape he has produced a three-dimensional feeling.

Composition

To compose a form, it is necessary to use all the elements of visual language in an organised way. We can compose forms in two-dimensional spaces (drawing, picture, sign) or three-dimensional spaces (sculpture, theatre stage, building).

6.1 The intention of composing

To make a good composition that expresses what you want, you must consider your purpose or intention.

The cultural climate of the time conditions all compositions. To understand and to make compositions, it is necessary to know what laws to use and to recognise the factors affecting our perception.

Composing involves distributing and arranging objects or choosing the most appropriate forms. It does not mean filling up a space with elements until it is completely full. Empty (negative) spaces make it easier to read and highlight a work of art's organisation. The composing space and elements inside it must have a certain relationship of size, form, colour, distribution, etc., between positive and negative (empty) spaces.

DIEGO DE VELÁZQUEZ, *LAS MENINAS*, 1656. In *Las Meninas* there are many diverse characters as well as other elements. The one that stands out the most is Princess Margaret (main focal point), surrounded by her cousin and servants, because of her central placement and the light colours. Although the other characters are subordinate elements, Velázquez did not choose them at random and each has its own story and importance. It is a painting that is easy to read and pleasing to the eye. It introduces the observer to the life and customs of the characters in a simple way.

A composition's purpose is based on unity, which means that elements are placed according to their importance; nevertheless, it is good to provoke the observer's interest by creating a focal point.

6.2 Representing or composing

A composition comes from the observation of real-life forms in comparison to those we imagine. It is the result of the interaction between what we really see and what we subjectively perceive. The image becomes an interpretation of reality.

A composition requires the study of the form and its configuration. To do so, it is necessary to think up a scheme that can express the structure of the object or form and then, create a corresponding pictorial environment.

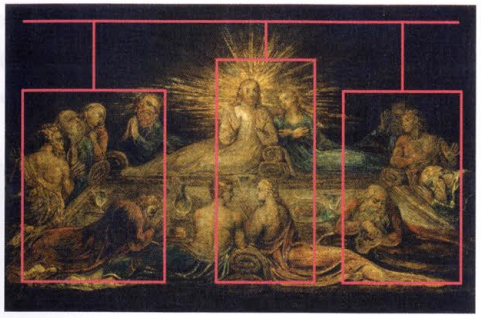
The composition of an image involves organising fundamental graphical elements (such as the line, texture and colour) into an appropriate space to convey a visual message.

ANDRE DERAIN, *CHARING CROSS BRIDGE*, 1905. *Charing Cross Bridge* is a representation of a landscape. The artist has interpreted the shapes, colours and lights with the compositional aim of creating balance.

6.3 Balance

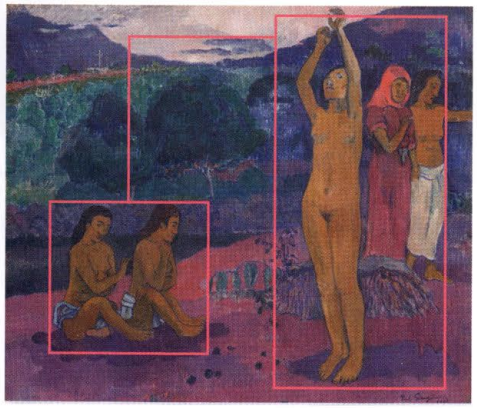
This is the state of a composition where the force or visual attraction of the elements that appear are equivalent. Here are two criteria you can use to balance your compositions:

- **Law of balance.** This is similar to a traditional pair of scales (weighing machine). Following this rule involves placing similar forms (in size, colour, etc.) at the same distance from the centre.



WILLIAM BLAKE, *THE LAST SUPPER*, 1799. Composition based on the law of balance.

- **Law of compensation.** This is more similar to Roman scales with a weight on one end. Here you balance by counterweight.



PAUL GAUGUIN, *INVOCATION*, 1903. This work of art is organised by the law of compensation.

6.4 Visual weight

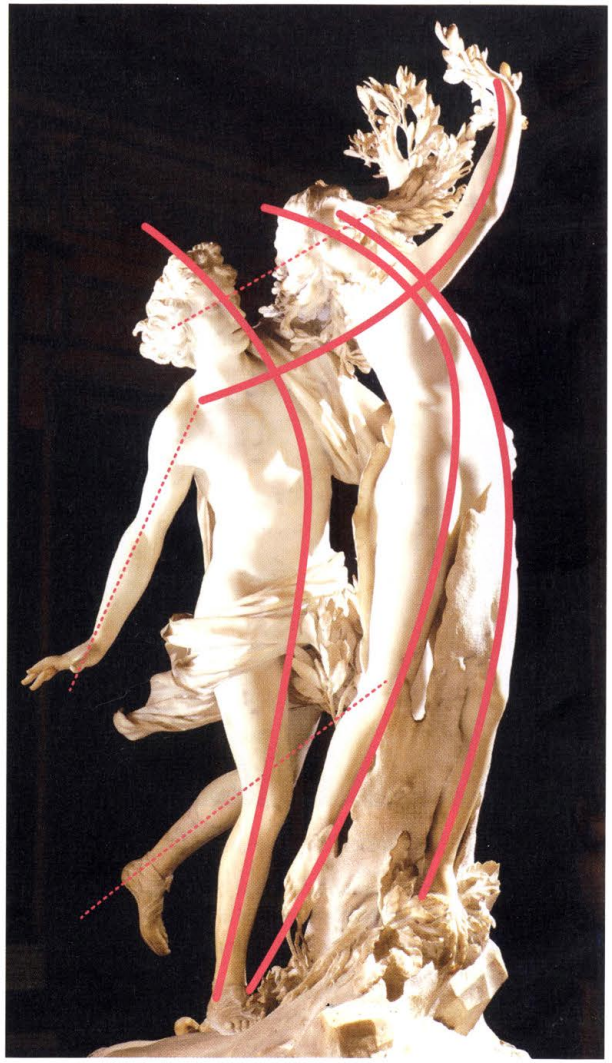
The visual weight of a form can change according to visual or expressive interests. A feather can visually weigh more than a weight does. Any object changes its visual weight according to where it lies on the support, its size, shape, colour and texture.

6.5 Tension lines

You can use tension lines in an image as a way to organise the elements that create movement and visual dynamism in a compositional space. You can also use them to discover the internal organisation of these elements.

Tension lines are invisible or induced lines produced by the elements in the image. We call them tension lines when they produce some type of shock or clash: Lines that suddenly cut across forming angles, opposition between straight lines and curves, or between broken and wavy lines, etc. There are several types of tension lines:

- Tension lines represented by the **shaping of the image's forms.** You can draw these by joining points that delimit the most eye-catching directions of the forms or objects (the directions marked by arms, hands, bodies, etc.).
- Tension lines directed across the **eye contact between characters.** You can draw them out by following the eye contact between characters or by following the direction of forms.
- Lines determined by the **reading of a composition.** Our eyes travel across a composition according to the hierarchy that exists between its composing elements. Our visual reading starts at the main focal point and then moves towards less important elements.



GIAN LORENZO BERNINI, *APOLLO AND DAPHNE*, 1620. Look at the different lines that make up the forms and the figures' gaze. As you read the composition, you start at the figures' heads, then you look at their arms and, finally, your gaze travels down their bodies.

6.6 Time and movement

To have movement in an image, you must know how to translate time onto a composing space. In other words, you must understand how to represent real time through an image.

We can represent the passing of time in one composition as a way to tell a story, by repeating the focal point or main character in several situations.

A feeling of movement is also posible by using dynamic forms that, by themselves, generate tension between the different elements.

MARTEN DE VOS, *THE RAPE OF EUROPA*, 16TH CENTURY.

This work of art represents the passage of time by repeating the figure of Europa, on the left, before she is kidnapped. Her movement is conveyed by the tension lines drawn by the clothing and the figure's position.

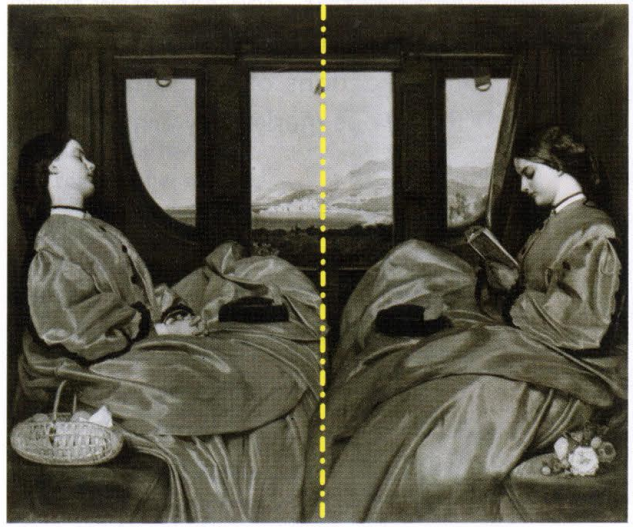
6.7 Symmetry

Throughout history, people have used symmetry as a way to organise elements in a space. We can use it to unify and organise different parts of an image harmonically. Symmetry arranges and balances a composition into equal parts.

A. Axial symmetry

To compose using axial symmetry, you must distribute elements on both sides of an imaginary axis. This is called the axis of symmetry and you usually place it in the middle of the space you are composing. This imaginary axis can be vertical, horizontal or oblique.

Symmetry can be used more freely in art than in technical drawing. This work of art by Augustus Leopold Egg is symmetrical and it is not composed according to the law of balance because its focal point is not in the centre, but rather distributed across both sides.

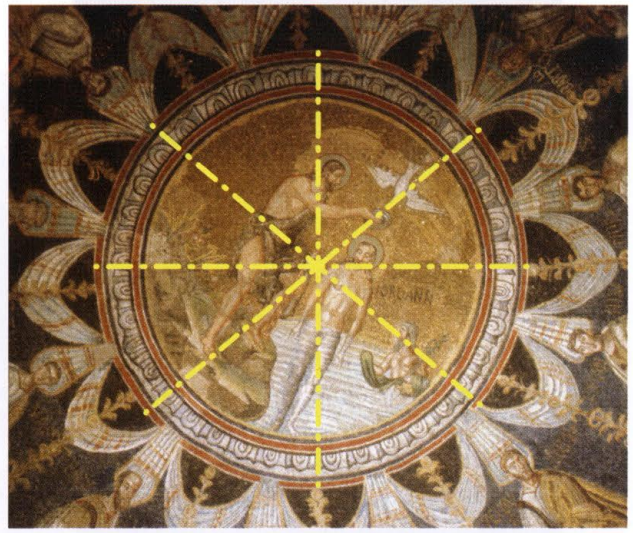


AUGUSTUS LEOPOLD EGG, *THE TRAVELLING COMPANIONS*, 1863. Axial symetry.

B. Radial symmetry

In radial symmetry, we distribute elements along several axes that all pass through a common point. We place the elements at the same distance from the centre. This point is called the **centre of symmetry** and its axes are arranged like the spokes of a wheel. Reversed elements always appear in this type of composition.

Look at the position of the elements. Some of them seem upside down, and all of them are placed at the same distance from an imaginary point in the center. This composition is in the ceiling of a dome, above the viewer; thus, our point of view comes from below.

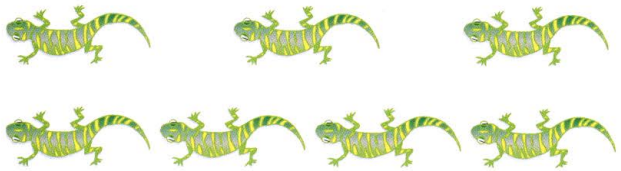


CEILING OF THE BAPTISTERY OF NEON (Ravenna). Radial symmetry.

6.8 Rhythm

Rhythm is a harmonic sequence of occupied space, free space or repeated forms in an image. Any kind of sequence describes a trajectory that organises a surface and gives the impression of dynamic impulses. These trajectories can be horizontal, vertical, sloping, concurrent at the same point, etc.

- **Uniform rhythm.** This takes place when we repeat the same form in a constan, regular way.

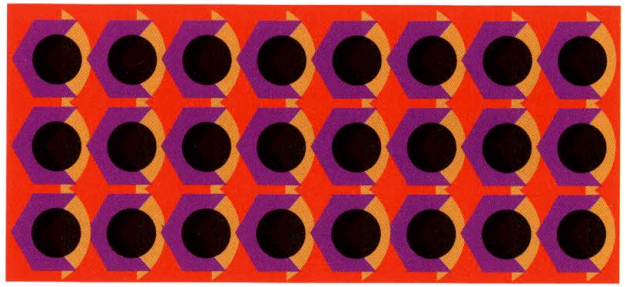


- **Alternate rhythm.** Alternation is the repetition of a filled space element followed by an empty one. The use of two or more elements with different positioning, shape, size, colour or texture accentuates the dynamism of the sequence.

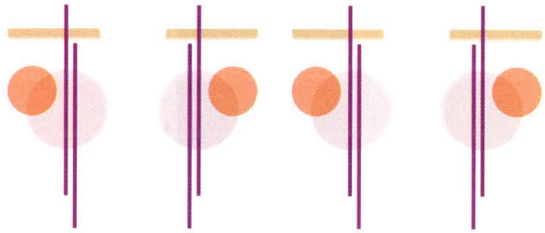
- **Increasing and decreasing rhythm.** We create this type of rhythm by successively changing size, thickness, height or colour.

- **Radial and concentric rhythm.** When elements start at a central point and open outwards in a sequential way, rhythm is organised by an imaginary radius. In the same way, concentric rhythm starts at the centre and the elements expand out towards the outside.

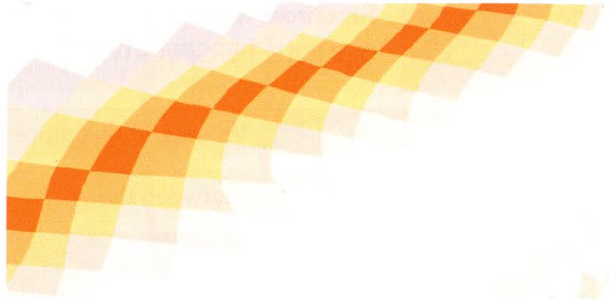
- **Modular rhythm.** Modules are sets of grouped forms that create a visual unit when put together. Just like rhythms using only one form, modular ones can create a uniform rhythm, an alternate rhythm with two or more modules, an increasing rhythm, etc.



- **Symmetrical rhythm.** This is another way of generating sequences, either with just one form or with modular visual units.



- **Rhythmic surfaces.** This rhythm can move in all directions, crossing and occupying the entire surface.



- **Free rhythm.** To work with free rhythms easily, you should distribute the forms on an imaginary line that follows a sequential path. The only thing you should keep in mind is the repetition in the elements in the composition.

MIND MAP — GET INTO ART

FORMAL ELEMENTS OF IMAGES

- **DOTS**
  - TYPES: _____ and _____.
- **LINES**
  - STYLE: Types of lines transmit graphic messages by 'writing through form'.
  - QUALITIES:
    - Line _____ and _____ the image's surface.
    - It depends on _____.
      SPATIAL DISTRIBUTION. _____. DEPTH. _____
- **TEXTURE**
  - TYPES: Depending on TACTILE or VISUAL
  - EXPRESSIVENESS: Texture contributes to the configuration of the _____ and conveys different _____.

COLOUR

- **COLOUR MIXING**
  - COLOURED LIGHTS: PRIMARY: _____, _____, _____.
    SECONDARY: _____, _____, _____.
  - COLOURED PIGMENTS: PRIMARY: _____, _____, _____.
    SECONDARY: _____, _____, _____.
- **COMPLEMENTARY COLOURS**: A primary colour is complementary or opposite to a secondary one when _____.

SPACE AND DEPTH: Resources to represent three-dimensional elements on a two-dimensional support: OBLIQUE PERSPECTIVE, _____, SIZE OF FIGURES, _____, OVERLAPPING, _____.

SPACE AND VOLUME: Volume of the represented objects contributes to the sense of depth.

PROPORTION: Relationship between the _____ of the _____ and the _____ of an object or figure.

- **THE CANON**: _____ of measurements considered to be _____, accepted and used.
- **THE GOLDEN RATIO**: The _____ between parts is always constant and equal to 1.6180339.

COMPOSITION: _____ and _____ objects, so that empty spaces make it easier to read and highlight its organisation.

- **RESOURCES**: _____ (law of balance, law of compensation), VISUAL WEIGHT, _____, SYMMETRY, _____.

LOOK AROUND YOU

In this unit you have learnt how to create, modify and distribute images.

I'M A GRAPHIC DESIGNER

In this project you are going to be a designer. Your task is to create a poster for one of the cities in the United Kingdom. You will produce a design, based on the use of VISUAL ELEMENTS to represent the highlights of the city.

- Work in groups of 4 people. Each member of the group should look for information about one city and then try to persuade the group to choose this city to represent.
- Discuss between all the members of the group which of the four cities will be represented in your poster.
- Start with the sketches and check your proposals with your teacher before you select the final one.
- You should explain the use of colour, proportion and composition that you chose.
- Make a presentation to introduce your city.
- Show your poster and explain how you made it.

Download the self-assessment sheet from the OLC to assess your 'can-do abilities'.

Iconicity and abstraction

In a representation, we can use images with a high, medium or low level of fidelity, or similarity to reality. This similarity between an image and the thing it represents is called its level of iconicity. The more similar it is to reality, the more iconic the image is. The alternative to iconic representation is abstract representation. We can summarise it on the following scale that classifies types of images:

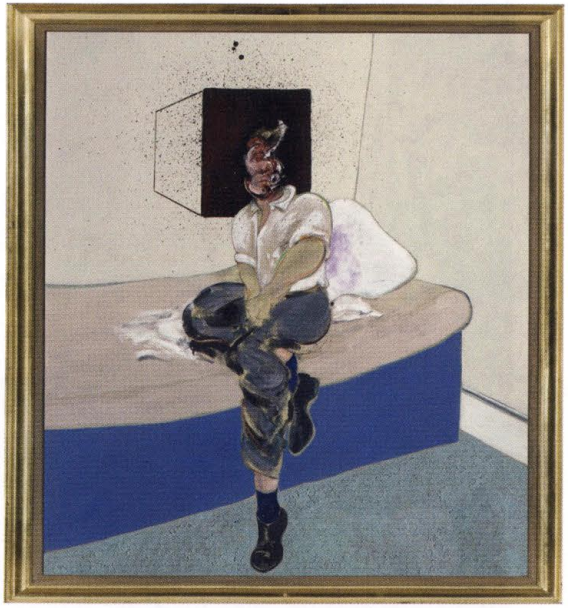
Low level

Arbitrary designs. Road signs have lost their direct relation to the senses.

Stylised design. Maps, plans and charts have conceptualised characteristics.

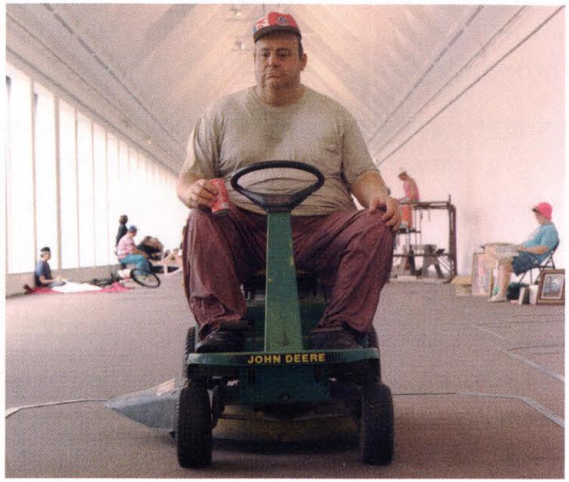
Medium level

Colour photograph. A middle level or representative capacity.

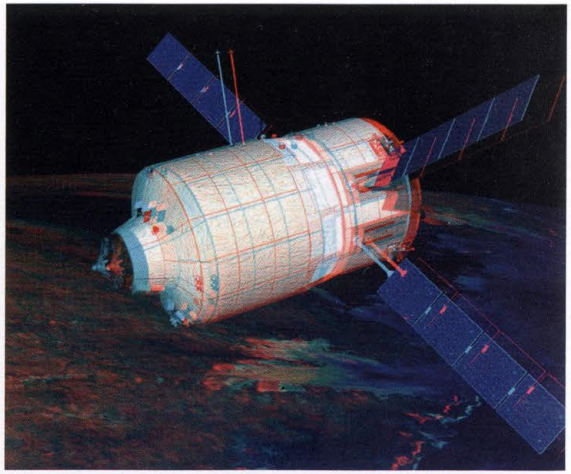


Francis Bacon, *Self-Portrait (Study)*, 1964. Unrealistic, figurative representation.

High level



Duane Hanson, *Man on a Mower*, 1995. Three-dimensional model. A sculpture that identifies closely with reality.



3D images. Holograms and augmented reality re-create the shape and position of objects in space.

2.4 Visual sign codes

A **sign** is a simple representation of an object or idea that transmits information. There are several types of signs.

A. Iconic signs

They use representations that are similar to reality. They are icons in which the signifier and the signified coincide by analogy.

The Camino de Santiago trail.

YOUR TURN

2. **Think about the footprints in the sand in the image on this page. Are they just marks? Could they be a symbol? What might they mean?**

   Define and explain the differences between:

   - Iconic signs.
   - Symbolic signs.
   - Indicative signs.

B. Symbolic signs

These signs synthesise information so that the recipient can easily understand and interpret the meaning. There are three types of symbols:

- **Signals.** These are stylised, simple representations of universal concepts that everyone can understand. Their level of representation varies from ideograms to pictograms.

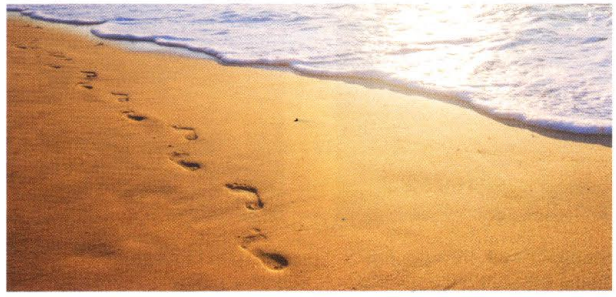
- **Brands.** These are simple, stylised signs that identify what they represent.

- **Symbols.** They represent only concepts, ideas or feelings. There is no direct relationship between the signifier and the signified, and they vary according to our education, culture and experience.

WILL COUNTS, *LITTLE ROCK DESEGREGATION*, 1957. Photographs as symbols.

C. Indicative signs

These signs have a cause-effect relationship with reality. Many of them are linked with a meaning by experience, such as a cloudy sky as a sign for stormy weather, or by common sense.



We understand the meaning of an image by association of ideas, convention or the socio-cultural context of the originator and the recipient. There are three stages to reading an image:

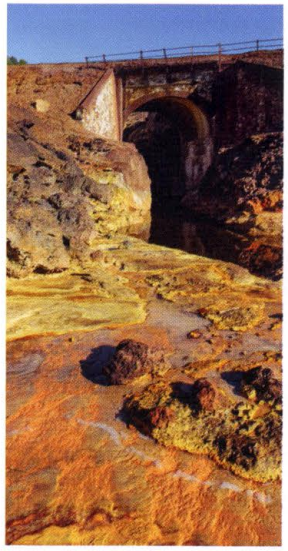
- **Description:** We objectively list the elements that appear.
- **Analysis:** We subjectively evaluate whatever the image suggests to us, linking the different elements.
- **Interpretation:** We establish the signification process and code, and we choose a coherent title.

3.1 Codes

Images establish a set of relationships that help us define their message.

A. Iconicity or abstraction

In some images, the represented object can be identified directly, whereas others have less similarity to reality. If the image shows reality as we perceive it with our eyes, it is an **iconic image.** If it looks different from our normal vision, whether because of the point of view, perspective or a fragment, then it is an **abstract image.**



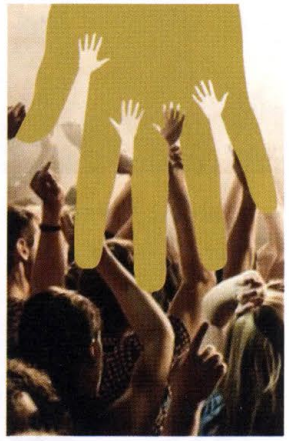
Iconic image. Mine in Río Tinto, Huelva.

Abstract image.

B. Simplicity or complexity

The number of elements that appear in the image, their structure and organisation in space influence our ability to understand its meaning. The simplicity or complexity depends on if there is just one meaning without relationships between elements or if the elements have meanings that relate to each other.

Semantic simplicity.

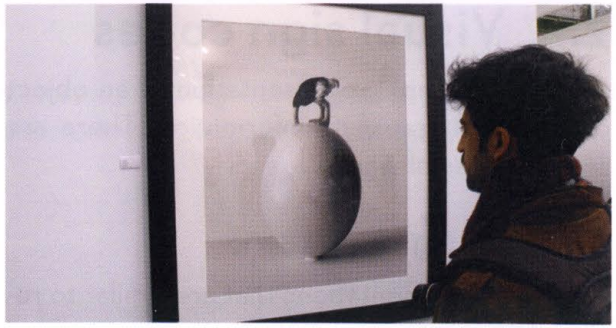


Semantic complexity.

C. Monosemy or polysemy

If an image has just one meaning, we say it is **monosemous.** Signals, for example, have simple messages that are immediately understood

Other images are more complex. They do not focus on describing reality and they allow for several different interpretations. They are **polysemous images.**



Polysemous images. CHEMA MADOZ, *OSTRICH*, Paris Photo Fair 2014.

D. Emotional impact and originality

Advertisements sometimes show us products in our surroundings to draw our attention in an original way, and this makes the message have a greater emotional impact on us.

Emotional impact.

YOUR TURN

3. **In pairs, analyse the codes used in one of these images. Analyse the iconicity, the complexity, the meaning, the emotional impact and the originality.**

   Follow this structure with each element you analyse:

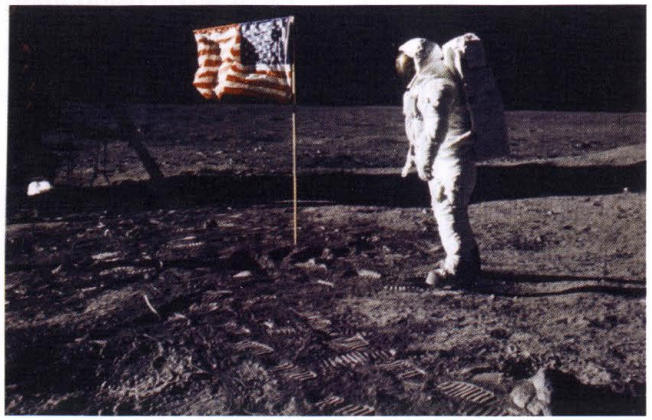
   - *This image shows a high level of iconicity because it has a lot of similarity to reality.*
   - *This is an abstract image because it looks different from reality.*

Expressive and referential context

We can find images in our surroundings that have different uses and respond to different interests.

Some images can be used to document reality. For instance, the case with newspaper photos that show us what has happened in a particular place, or science magazines which show us aspects of reality. These images have **referential value.**

Others have **expressive value.** This means they try to touch our emotions or make us identify with what is happening in the image.



Mankind's arrival on the Moon.

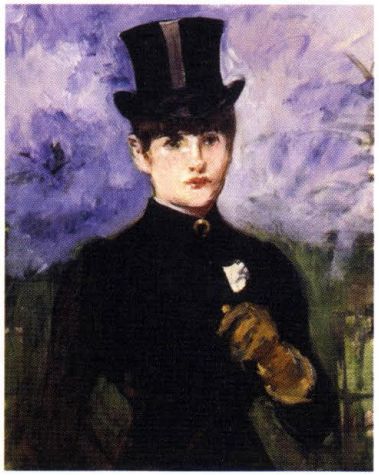
Photojournalism.

3.3 Modes of expression

As you have seen, images can be similar to reality or quite different. They can also have different visual styles. Here are some examples. You can install an app on your mobile phone or tablet that lets you apply different artistic styles to images.

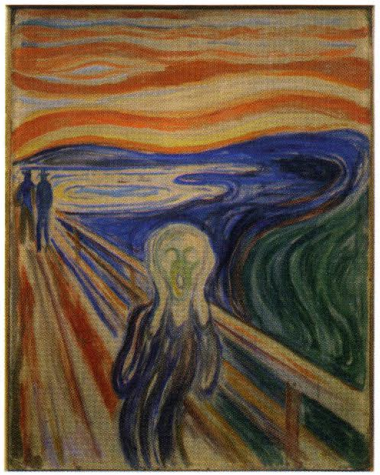
GIOTTO, *THE LIBERATION OF THE HERETIC PETER*, 1295.

Primitivism is defined by the simplicity of the shapes, flat representations and basic colours.



ÉDOUARD MANET, *PORTRAIT OF A HORSEWOMAN*, 1882.

Classicism is rational and logical. It is a style found in art and design.



EDVARD MUNCH, *THE SCREAM*, 1893.

Expressionism exaggerates shapes found in reality and tries to provoke emotions.

JEAN-HONORÉ FRAGONARD, *THE SWING*, 1767.

Decorative art aims to enhance the artwork's visual effects.

FERNAND LÉGER, *THE THREE COMRADES*, 1920.

Functional art favours utilitarian shapes in a visual structure.

Intentionality of visual messages

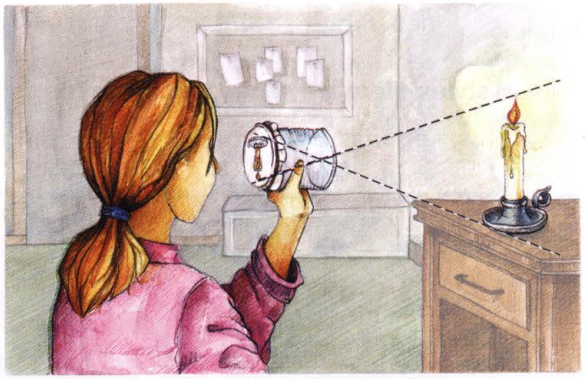
Throughout history, people have looked for ways to communicate with each other using images.

Images perform different functions depending on their purpose. You can see below the three main functions images have.

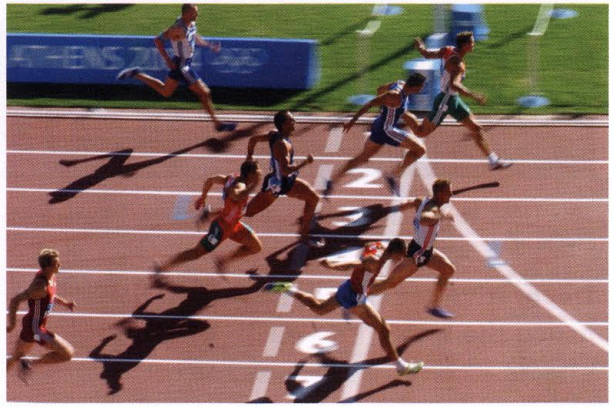
A. Informative images

Their main function is to transmit information and important data, as maps and graphs do. Informative images are clear, direct and objective.

In other cases, these images refer to events and they emphasise the information surrounding the event.



Descriptive image.

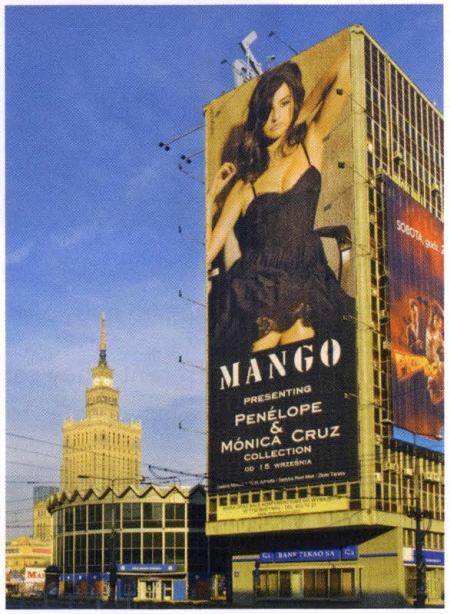


Informative image.

B. Exhortative images

Most advertising images are exhortative. They try to persuade the receiver to consume a product, a service or an idea.

In propaganda, the image highlights the positive qualities of something and hides the bad ones.



Advertising.

Propaganda.

C. Aesthetic images

These images mainly communicate beauty and harmony. These feelings arise from the relationships between the forms within the image.

Tate Modern's major exhibition of the work of Robert Rauschenberg (1925-2008).

Reading a work of art

It is difficult to define what art is, but we can say that it is a uniquely human activity that uses images to communicate and express things subjectively.

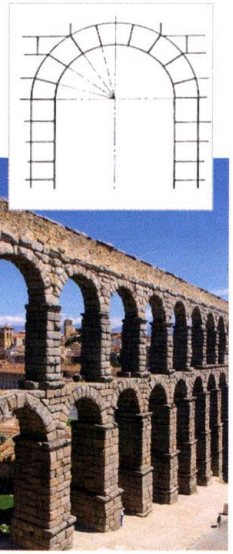
A. Architecture

Architecture is considered the first of the fine arts and it is based on two key ideas: the concept of **form** and **function.**

Architecture is a **functional art** whose purpose is to design and create spaces that shelter and accommodate humans, so that we can carry out all kinds of activities in safety and comfort.

The elements that make up the language of architecture are:

- **Materials.** Some of the most commonly used ones are adobe, wood, cement, brick, stone, iron and aluminium.
- **Floor plan and elevation.** These are flat representations of a building seen from above (the floor plan) and the front or side (elevation). The plan shows the walls, supports, surfaces and rooms.
- **Supporting elements.** These are the parts that hold up the walls, making it possible to build different floors and surfaces. The most important ones are:
  - **Walls.** Separate rooms and support the roof.
  - **Columns.** Cylinder-shaped elements of architecture that support weights.
  - **Pillars.** They have the same function as columns but they are prism-shaped.
  - **Lintels.** Horizontal elements that distribute weights and may form the upper part of a door or window.
  - **Arch.** Curved construction elements used to distribute weights and cover the gap between two columns or pillars.

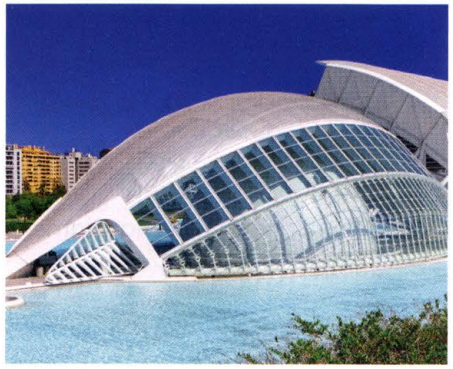


The Aqueduct of Segovia.

- **Supported elements.** The ceiling and the roof make the top of a building or **roofing.** They cover and protect the whole building. According to their structure, they may be:
  - **Flat or apex.**
  - **Vaulted.** Curved type of roofing that is used to cover the space between two walls or several pillars.
  - **Domed.** Roofing with a semi-spherical shape that can be used to cover a square or round space.

Different building methods have been used throughout history. The main ones are:

- **Architrave or linteled architecture.** Straight horizontal coverings are supported by pillars or columns.
- **Vaulted architecture.** Buildings are covered using vaults and domes with circular or spherical shapes.
- **Architecture in new materials.** Since the 20th century, the internal skeletons of buildings have been made with materials like steel, iron and concrete.



Santiago Calatrava, *L'Hemisfèric*, Valencia.

YOUR TURN

4. Design a poster summing up the elements that make up the language of architecture. Use text and images to create a complete outline.

Colour

2.1 The hidden reality of colour

A daisy is a real flower we can touch, cut from its stem or pull off its petals, yet we cannot take away its colour. There is no colour inside the daisy; it is only an illusion. Where is colour, then? **Colour** is just an impression that exists in our brain.

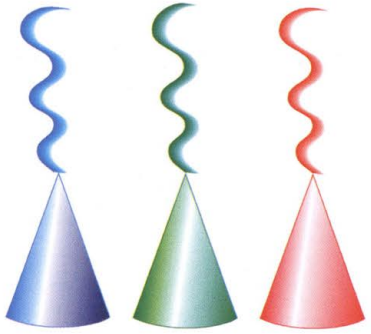
A. The optics of colour

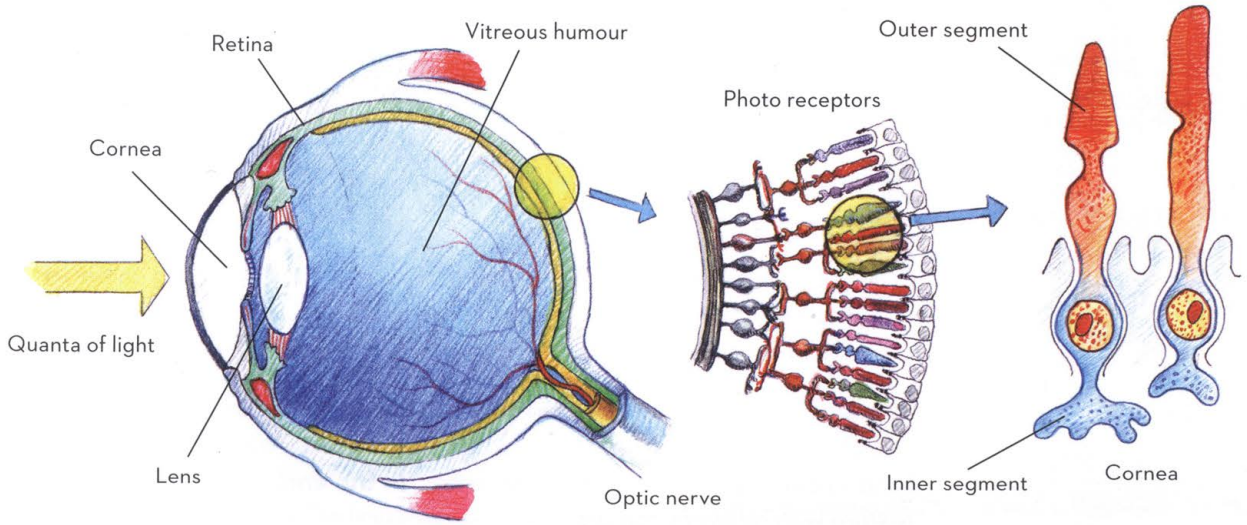
To understand how the brain receives and interprets colour, it is important to understand how an electromagnetic light wave turns into an electric impulse.

Light travels through space in the form of waves. Small units of energy, called quanta, make up these waves. When a quantum enters the eye, it goes through the cornea and passes through the lens. It goes through a gelatinous substance, called the vitreous humour, and reaches the retina at the back of the ocular globe. At the retina, the quantum stimulates photoreceptors.

B. The sensation of colour

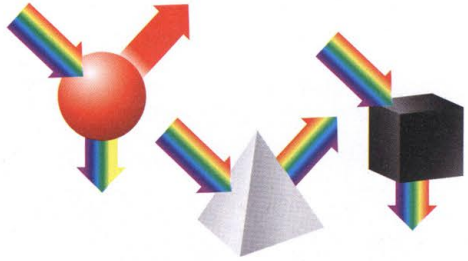
There are three types of cone that are capable of receiving light waves of specific lengths: The shortest light wave is blue; red is medium-length waves; and the longest light wave is green.





C. Absorption and reflection

When a ray of light reaches a surface it can be reflected (it bounces back when it touches the surface), or absorbed (it stays on the surface).



Opaque surfaces absorb all or part of the white light and reflect the colour of the light that we see.

If the surface is **transparent,** the light does not change at all, like when we look through a window.

If the glass is **coloured,** however, some of the colours in the white light are absorbed by the glass and only the colours of the glass pass through. For example, if you look through red glass, everything you see has a reddish hue.

If the surface is **translucent,** like a lampshade, it scatters the directions of the light waves, diffusing the colour.