Shape's qualities and types

Fill in the blanks with the given words below.

perceived - environment - quality - formed - compose - tactile - flat - location

The shape's **configuration** is the _____ referred to the structure of the shape. It can basically be two-dimensional or three-dimensional.
The **size** is set by comparison of dimensions with other shapes of the _____ .
Shapes are _____ by materials which are the elements that _____ them and codition their **texture**, which is the visual or _____ quality surface.
As well as **color,** that depends on the light the shape receives to be _____ .
Position refers to how you find the shape arranged in _____ or three-dimensional space.
The **situation** is determined by the shape's _____ in space and can be determined taking into account other shapes around it.

Read the types of shapes text below and label the pictures with A or B and 1 or 2.

TYPES OF SHAPES:

According to their source or origin:
1- Natural shapes come from nature.
2- Artificial shapes: They are produced by human
Depending on their configuration:
A- Geometric Shapes: They are structured according to mathematical laws.
B- Organic shapes: They have a more free and adventurous settings.


Camouflage.

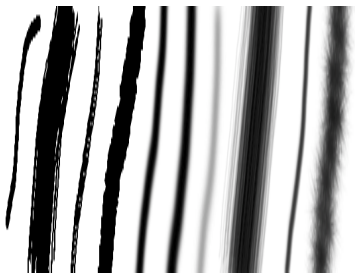

Rookery building 1891.


Honeycomb.


Sycamore Gap Tree.

All images source (except camouflage) :http://commons.wikimedia.org/

Techniques, artistic styles, gesture drawing and types of lines



Drawing is a basic way to depict the objects' shapes. The **brushstroke or line** is the graphism or features of lines in a drawing.
There are different types of paths: thick, thin, intense, soft, blury, etc.
The quality and expressive effects depend on the materials they are made with pencil, charcoal, waxes, paint.
Qualities and expressive effects also depend on the pressure of the hand and the medium in which the work has been done such as paper, wood, metal, stone, canvas, etc.

Holton Rower and Amy Shakelton


Holton Rower. Untitled 2011.


Amy Shakelton

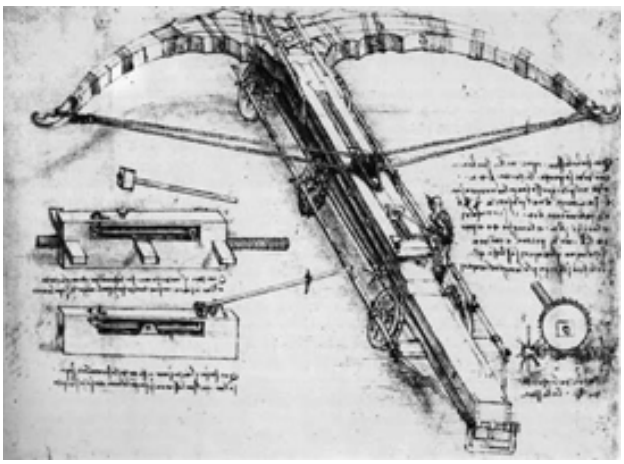
Watch this **video of Amy Shakelton** painting a diptych with no brushes
http://youtu.be/6yVhTyPaaLQ

In **this video** you will see the painting thechnic H. Rowers uses for his paintings
http://youtu.be/oEwYMUaqX3Q

Source for Amy Shakelton Image: http://crispme.com/featured-artist-amy-shackleton-look-ma-no-paint-brush/
Source for Holton Rower Image:http://holtonrower.com/

Drawing methods, sketching

A **draft** is a previous study that works as a training, brainstorm or final drawing test. Usually the **final artwork** is derived from one or more drafts, the final result is an improved and corrected version of any of these drawings.
A **life drawing** is a depiction made or **taken directly** in the presence of the **referent** or the **model**. It works either as a draft, as sometimes the artist takes the life drawing to his **studio** to keep working on improved **versions** of it, or as a final artwork.
A **sketch** is similar to a draft, it is generally a simplified or schematic drawing. Drafts and sketches main function is to define the idea or the main parts of an object.
The **Atlantic Codex** is a set of texts and drawings with notes by **Leonardo da Vinci**. It contains a wide variety of subjects such as weaponry, musical instruments, mathematics botany, etc. Leonardo made many sketches of **imaginary** machines and devices, some of them taken to reality some other left as simple sketches. All these inventions could be the beginings of engineering.
Villard de Honnecourt was an architect or traveling construction master worker during the 13th century. He was known by his **sketch notepad** which has 33 parchment pages with graphic and written notes about architecture, human figure and nature.



Browse the 33 pages in **Villard de Honnecourt's Portdfolio** online

http://classes.bnf.fr/villard/feuillet/index.htm

Watch **this video** about the digitalization of Da Vinci's Atlantic Codex.

http://youtu.be/p8maxW1gm0s

Page 63 from Villard de Honnecourt portfolio. *Source:http://classes.bnf.fr/villard/feuillet/index.htm*
Atlantic codex page. *Source: http://commons.wikimedia.org/*

From the pictures above, Which one is Villard's and which one is Leonardo's?

Artistic styles: Realism and figuration

The Style refers to personal and artistic character that is given to a work or a set of them. The style encompasses choice of themes, colors, shapes, textures etc.
Realism is a type of depiction that represents reality with more or less accurancy. Realism is strictly related to **figuration** or **figurative art** in which images resemble the referents being clearly identificable.
Opposite is **abstraction**, which is a type of depiction in which any shape or form of daily life is not recognized. There are different levels of abstraction such as abstract expressionism or geometric abstraction.

Le Déjeuner sur l'herbe. Manet. 1863
Source: http://commons.wikimedia.org/

Le Déjeuner sur l'herbe. Picasso. 1960
Source:http://daily-norm.com/

Desayuno sobre la hierba. Paco Jarque.
Source:http://pacojarque.wordpress.com/

Closed shapes of Cubism Versus Open shapes of Futurism and Turner

Shapes can be used to give certain expression to the artwork. Open shapes, have a difuse contour (or outline) and enhance movement. **Closed shapes** are clear and focused and produce a sense of order and seriousness.

Cubism was an artistic movement developed in the early 20th century in France. They had a particular style, **influenced by Cezzane and African masks**, depicting **several points of view** in the same drawing, generally with **closed shapes**.
His leader was **Picasso**, he usually eclipsed other authors as Juan Gris and George Braque.
Cubism is an important artistic movement because it opens the 20th century **avant-gardes**. It´s not just one more avant-garde, but the definitive break with traditional painting.

Little harbor in Normandy.
Georges Braque. 1909
Source: http://commons.wikimedia.org/

Anagoria glass and bottles.
Juan Gris. 1912
Source: http://commons.wikimedia.org/

Juan Gris was a Spanish artist who studied in several traditional art academies. He was influenced by painters as Cezzanne, Braque or Picasso and so he decided to break with traditional rules getting his cubist style. When he began his cubist style he used gray colours, and that's the reason for the name he is known changing into a more coloured style later.

George Braque was a French artist who belonged to other previous artistic movements when he got to know Picasso. Since then he started working along with him.
But there are also other artistic movements that used closed shapes in order to achieve other visual effects or other types of expression.

Dynamism of a dog on a leash
Giacomo Balla. 1912
Source:http://www.wikipaintings.org/

Goldau
William Turner. 1841
Source:http://www.wikipaintings.org/

Futuristm was an early avant garde born in Milan (Italy). They loved speed and movement. Giacomo Balla is one of the futurist artists. He tries to depict the movement of a dog when walking.
William Turner was a romantic painter known for his blury foggy or stormy landscapes.

Shape: The external configuration of things.
Simple shape: It has a brief outline and easily displayed, for example a point or a line.
Complex shape: A surface composed of several elements such as planes, lines, dots and different colors and textures, all of it related to each other. Their perception is more complex and can vary according to the recipient.

QUALITIES

Configuration: Quality referred to the structure of the shape. It can be two-dimensional such as polygonal, curved or irregular shaped; or three-dimensional such as cubic, pyramidal, conical, spherical, etc..
Size: The physical dimensionsor extent of anything. It is set by comparison with other surrounding shapes.
Material: Element with which the shape is composed.
Texture: Visual or tactile quality of the shape's surface. It is related to the material and its finish.
Color: It depends on the light that the shape's surface receives, the colour we percieve from it may vary.
Position: Refers to how you find the way or three-dimensional flat space (lying, facing in, profile, etc.).
Situation: Is determined by its location in space and it depends on other shapes around it.

TYPES OF SHAPES:

According to their source or origin:
Natural shapes: They come from enviroment.
Artificial shapes: They are produced by human
Depending on its configuration:
Geometric Shapes: They are structured according to mathematical laws.
Organic shapes: They have more random and hazardous settings.

Drawing: Depiction of shapes and forms on a surface mainly by the use of lines. Color and shadding may be included
Brushstroke or gesture line: The graphism or features of lines in a drawing. There are different types of lines (thick, thin, intense, soft, etc.) the quality and expressive effects depend on the materials they are made with, pressure of the hand, etc..

METHODS OF DRAWING:

Draft: a previous study that serves as preparation or final drawing test. **Final artwork**: It is derived from one or more drafts, it is an improved and corrected version of these.
Life drawing: is a depiction made or taken directly in the presence of the referent. It works either as a draft or as a final drawing.
Sketch: Simplified or schematic drawing, its main function is to define the idea or the main parts of an object.

EXPRESSIVENESS OF THE SHAPES:

Open shapes: They enhance the feeling of movement, if they are also organic the movement sence is highlighted.
Closed shapes: They produce a sense of order and seriousness, moreover if the shape has geometric features this impression is greater.

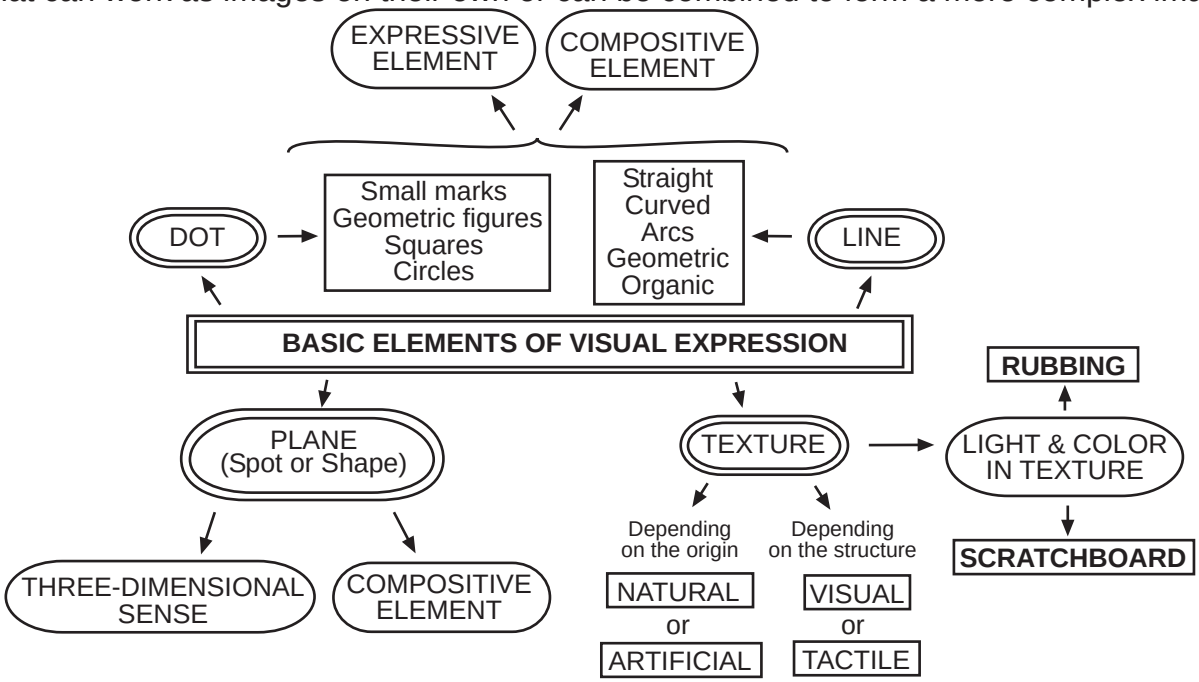
EXPRESSIVE STAGES OF GRAPHIC REPRESENTATION IN CHILDHOOD

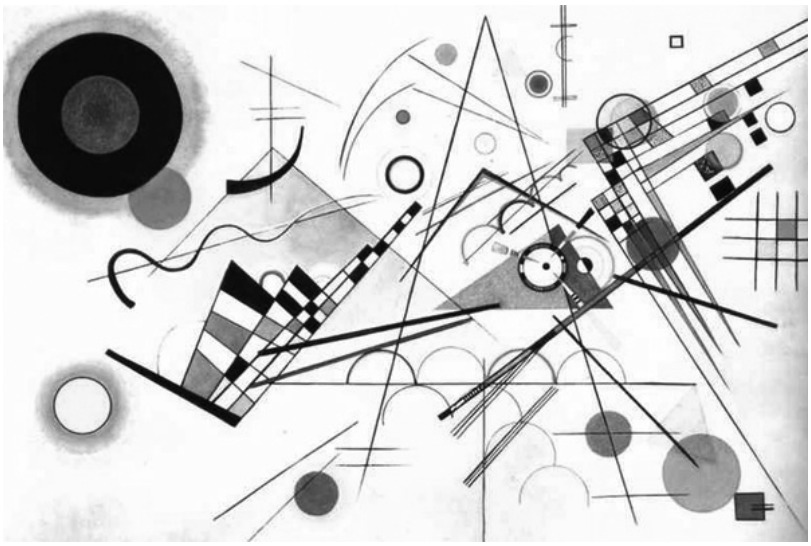
Doodle Stage: Children, between 2 and 3 years old, begin to express themselves with simple basic shapes used to represent most things around them.
Preschematic Stage: children between 3 and 6 years old begin to represent recognizable figures. Human arms and legs are represented with lines along with the body.
Schematic Stage: From the age of six the child begins to show an observation for everyday objects depictions. Although the child's perceptual analysis is not deep they get more realistic drawings regarding shapes and color. The space depiction starts to be expressed through views projected onto the ground.
Realistic stage: The child increases his ability of appreciation and analysis and this is reflected in their drawings closer to reality and observed as they actually look like. At this stage the observation of reality and imagination play a key role.

ARTISTIC STYLES:

Style: It refers to personal and artistic features that are given to an artwork or a set of them. The style covers the choice of themes, colors, shapes, textures etc.
Realism: Type of representation that represents reality accurately. Artistic realism shows some subjectivity of the author while a scientific realism is more objective and accurate.
Abstraction: It is a type of representation in which any shape or form of daily life or environment is not recognized easily. There are different levels of abstraction, the level of similarity with the reality, opposite to abstraction, of an image is called degree of **iconicity**.
Abstract Expressionism: Type of abstraction that places particular emphasis on graphics, gesture and expression.
Geometric Abstraction: It is somehow opposed to abstract expressionism and seeks beauty through rigor and precision.
Figuration: Any image in which the depicted resembles the referent being therefore clearly identifiable. A work that is recognizable is said to be figurative.

As well as written comunication, visual comunication has an alphabet. It consists on several basic signs that can work as images on their own or can be combined to form a more complex image.





Composición VIII, Kandinsky, 1923 *Source: www.ibiblio.org*

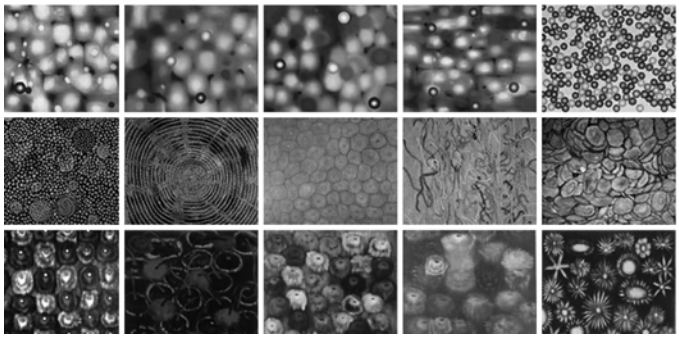
Kandinsky's artworks are the first ones in Art History considered entirely abstract. Kandinsky was influenced by new artistic movements that started taking a different depiction path than reality or realism.

He thought that art and its images must be related to the soul and can go farther than reality. In order to achive that thought he wrote books describing the feelings and ideas that colours, and visual elements express.

Many times Kandinsky used music as an inspiration for his artworks and, so many of the titles are related to music. He used basic geometric elements such as the line, that could be either an expressive or **compositive** element. The lines he used could be straight or **curved**, arcs, converging, parallel and sometimes in contrast with geometric lines they could even be **organic** or irregular.
The **dot** could take place in many appearances such as small figures, big **circles** or even squares or little geometric shapes. And the **plane** was usually depicted as a big geometric colored shape, sometimes filled up with colors and some other with more lines and dots that created a natural or artificial **texture**. Planes, lines and dots many times helped the artist to achieve a **tri-dimensional** sense with some sort of depth impression.

DIFFERENT QUALITIES OF DOTS

In Geometry a dot would be a small circle or also a point. A point can be determined by two crossing lines or an intersection between a line and a plane. Actually the geometric point doesn't have any features, any dimmensions. In Geometry points are just points given by coordinates, they don't have color, shapes or dimensions.

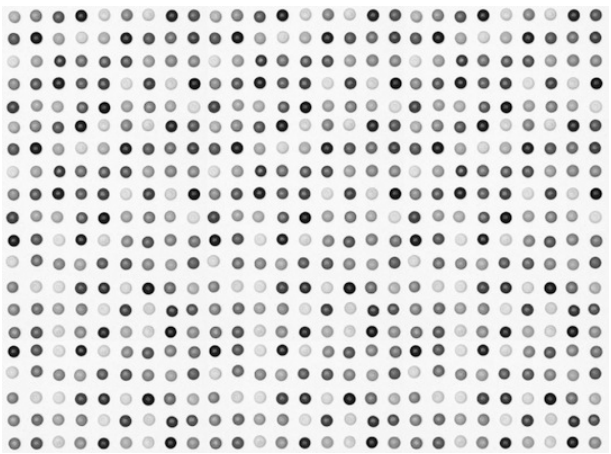


Images on the right are paintings by the abstract American painter Ross Bleckner. He uses the dot in many appearances and features to make his abstract depictions.
Source: http://www.rbleckner.com/paintings.html

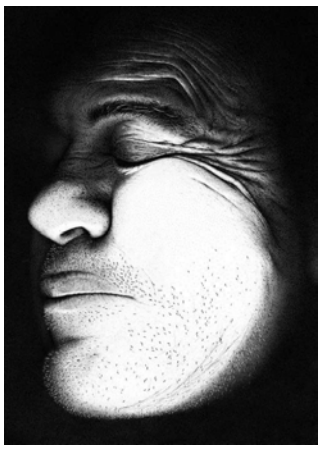
However in visual comunication such as art or graphic design the **dot** is the smallest **visual element** that can have **different features such as color, size, intensity or texture**.It can have or not an **outline** or and it can be **focussed** or **diffused**. It usually looks like a **small circle**, but can vary and adopt multiple appearances. For example in digital images it is a **square** called **pixel**. It can be **grouped** to form structures or **depictions with volume, texture, chiaroscuro**, etc.. By varying its characteristics it can change the **expressiveness of an image**. Depending on the location of the dot in the plane, different sensations can be created.

Check out **Obliteration room Art instalation by Yayoi Kusama** by clicking on the link or scanning the QR code.

Roman Mosaic:
Villa tejada lou, Palencia
Source: wikipedia

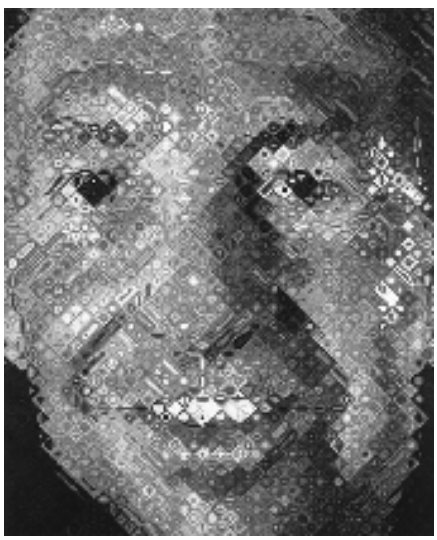


Damien Hirst, Spot painting version
By Henry Hargreaves
Source:http://www.highsnobiety.com/

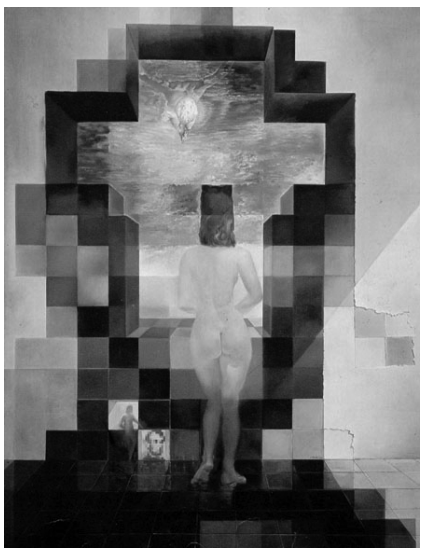


Miguel Endara's thin black marker's dots
Source: http://miguelendara.com/art/hero/

Niharu Matsunaga: Ten-Ten
Source: http://miharumatsunaga.com/ten-ten/



Chuck Close:
Robert Rauschenberg, 1997.
Source: http://www.flickr.com/photos/rocor/8332183896/



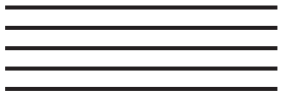
Gala contemplating the mediterranian sea. Dali.
Source: http://www.virtualdali.com/

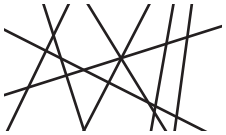
ARTISTIC EXPRESIVENESS OF LINES

Lines, depending on their **position** or **arrangement** on the image and its **features** mainly suggest **movement** and **tension**.
In general there are two types of lines: the **objective and clear** and the **subjective and modulated** lines. The first type is used when we want to give an accurate information, while both types are used in art and design.

Vertical lines usually give the **impression** of **balance and elevation**.

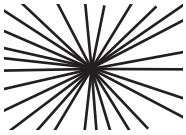
Horizontal lines suggest **calm, rest, tranquility and remoteness**.



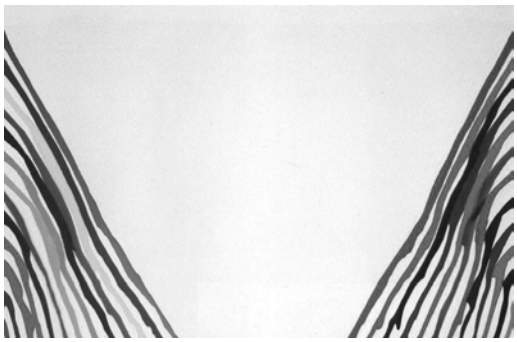


Sloping, skew or oblique lines transmit **motion, instability and tension**.

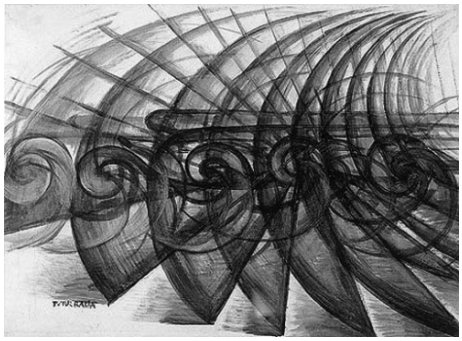
Curved or wavy lines may increase the **movement ilusion**.



And **converging lines** give the sense of unity and expansion.

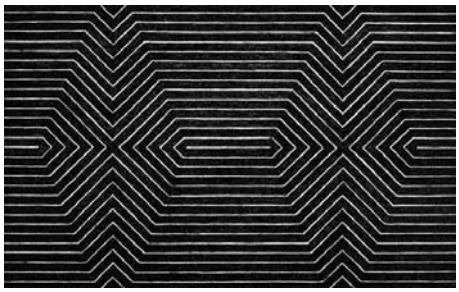


Beta Lambda. Morris Louis
Source: http://www.wikipaintings.org/en/morris-louis/beta-lambda-1961



Speed of a motorcycle. Giacomo Balla
Source: http://bittleston.com/artists/giacomo_balla/

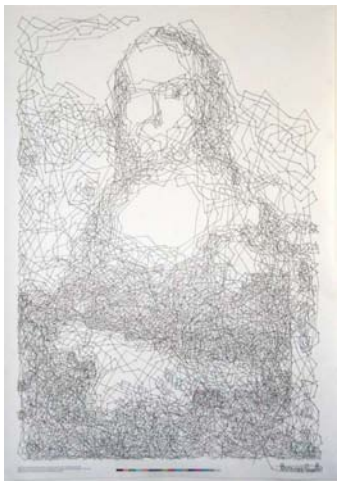
Small Rhino, wire and other materials
James Chedburn
Source http://james-chedburn.com/



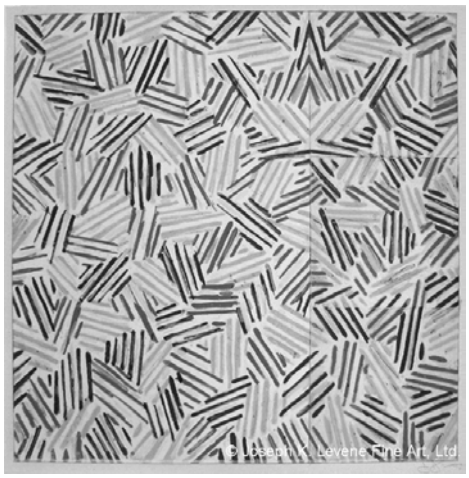
Turkish Mambo.
Frank Stella. Black paintings
Source:
http://www.wikipaintings.org/en/frank-stella/turkish-mambo-1967

Straight lines in all directions. 1996
Sol Lewitt.
Source:http://www.barbarakrakowgallery.com/contentmgr/showdetails.php/id/7646

Wall drawings at MASS MoCA. Sol Lewitt
Source: http://www.portlandart.net/archives/2009/03/the_black_squar_1.html



Mona Lisa. Thomas Pavitte
Dot to Dot drawings
Source: http://thomasmakesstuff.com/



#6 (after untitled 1975) Jasper Johns
Source:
http://www.artslant.com/ny/events/show/46953-jasper-johns-prints-1960-2007

The plane and Matisse

The word plane is more a geometric word that stands for a flat surface. When we talk about the plane in art and visual language in general we refer to shapes or brush strokes that define the elements of the depictions.

ACTIVITY__
Read the text. Below you can see three Matisse artworks with some plane atributions or features. Find the intruder, a feature that doesn't correspond, and scratch it.

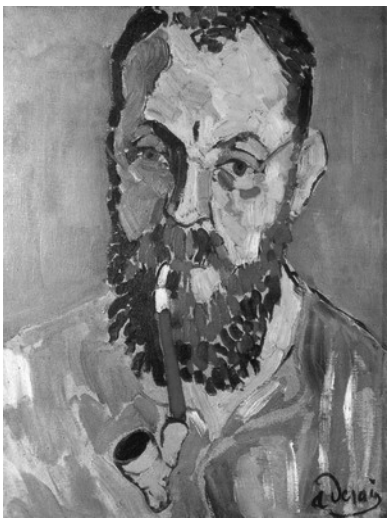
The **plane** has been used in painting giving different **atributions or features**, from **geometric** to **natural and organic**. Henry Matisse was a **fauvist** and **post impresionist** artist who used the plane using different techniques such as **collage** or **painting**. Fauvist comes from "fauve", which means in French "beast", and that adjective is referred to the **bright and agressive use of color** these painters did.
One of the main uses of the plane with color is to give **volume and depth** to the elements or the artwork, in most of those cases the plane can be observed as brush strokes. That can also be achieved by **changing the size** of the planes, also by **playing with their colors;** warm and light colors seem to be closer while cold and dark colours appear to be further. Contrasting colors work to obtain this goal. **Shading,** as well as **overlapping** shapes or planes can help to give depiction, depth and volume .

Snail Matisse
Source: http://www.tate.org.uk/art/artworks/matisse-the-snail-t00540

changing size
brush strokes
overlapping
geometric

Blue nude. Matisse
Source: http://www.henri-matisse.net/cutouts/m.html

Geometric
Collage
Color contrast
organic



Matisse Portrait with pipe. Adre Derain
Source: http://www.tate.org.uk/art/artworks/derain-henri-matisse-t00165

organic
brush strokes
Overlapping
Collage

Emilio Pettoruti

Emilio Pettoruti was an Argentinian Painter. He caused a scandal in an exhibition in Buenos Aires in 1924 due to his modern style. He was influenced by some avant gardes and his main style was cubist even though he didn't think himself as a cubist.
The head of cubists was Picasso and there are also some well known cubist painters such as Georges Braque or Juan Gris, so it's good to hear of another cubist painter different other than these.
Cubist painting main feature is the use of geometric planes, brush strokes or shapes showing a polygonal appearance to compose figurative but quite abstracted paintings.

Paisaje. Emilio Pettoruti
Source: http://www.artnet.com/artwork/426214496/425669004/emilio-pettoruti-paisaje.html

Textures are present in daily life. Art and image uses them constantly in painting and sculpture, but other disciplines like architecture, industrial and textile design or even for food texture is one of the main features.

Textures are the surfaces qualities, apart from color, that can be perceived with the sense of vision or touch.

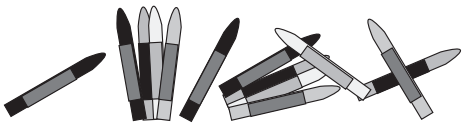
In first term a texture can be **visual or graphic** if they are only a flat image. Then they can only be **perceived** by the **sense of vision**, or **tactile** if they have a **relief** or real volume.

All textures are visual but only some of them are actually tactile so can be perceived with the sense of touch. Textures can be **geometric** if they show straight orthographic and ordely arranged **lines** and **dots**, and on the other hand they can be **organic** if they show an irregular and random arrangement of their elements. Depending on their origin they can be **natural** if they come from nature or **artificial** if they have been created by humans. Some natural textures look like geometric, like a pine apple skin or some artificial textures appear to be natural, for instance in fursnishing sometimes wood looking surfaces are created to appear to sight natural.

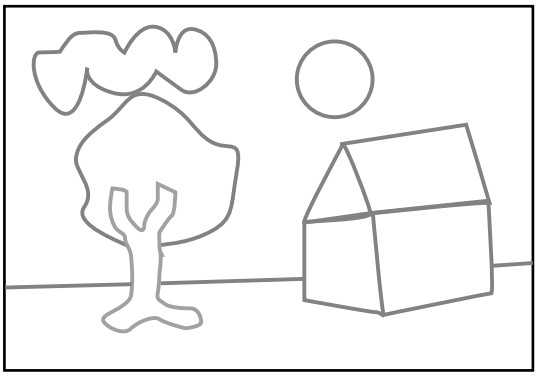
Here you have some adjectives related to textures: cold, warm, hot, freezing, soft, smooth, rough, dry, wet, regular, flat.

SCRATCHBOARDING SUPPLIES

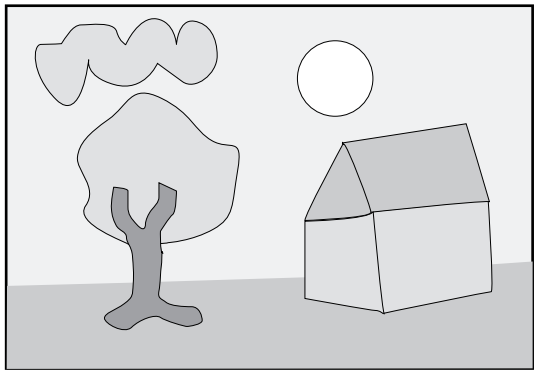
1º- A4 worksheet
2º- Pencil and eraser
3- Wax colors(no crayons, soft or greasy wax)
4º- Punch, graver or any tool to scratch.Toothpicks work great.
5º- Finally you can use some hairspray to make the wax stay and last longer.



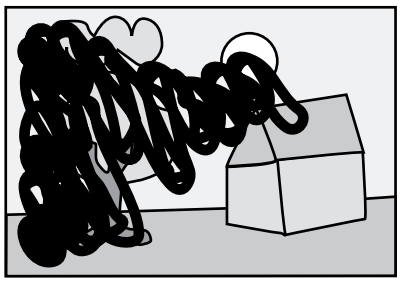
PROCEDURE



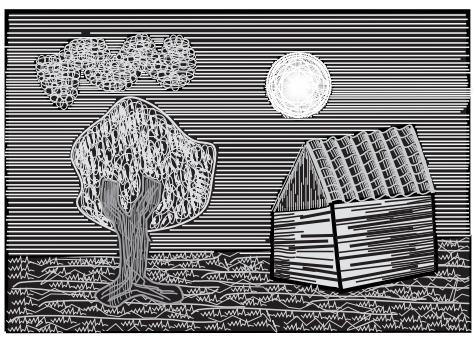
1-Draw with pencil the design you want, you can do sketches. The design must not contain small items or details because later they will be hard to find, as they will be covered by darker waxes. It is simply about drawing or arranging the space or composition with the main outlines of the figures.



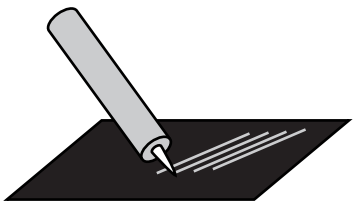
2- Color with wax crayons the drawing we have prepared. If we want to leave a white background for some element of the design it is important that we use the white wax crayon on the surface. Otherwise, in the next step, the black or dark wax layer will get adhered to the paper's surface and it will be difficult to remove it to show the white.



3- Cover with a black or dark wax layer the entire drawing. You must be patient and consistent.
At first it is hard because the wax slides over the first layer.
You will gradually cover the first layer and hide the colors completely.



4-With the punch or a toothpick scratch on the black or dark wax layer surface for discovering the first colored layer. You need to use as many graphic textures as you can, use the line and the dot as the basic visual element. Think that only with different types of lines you can achieve lots and lots of different textures and mazes.

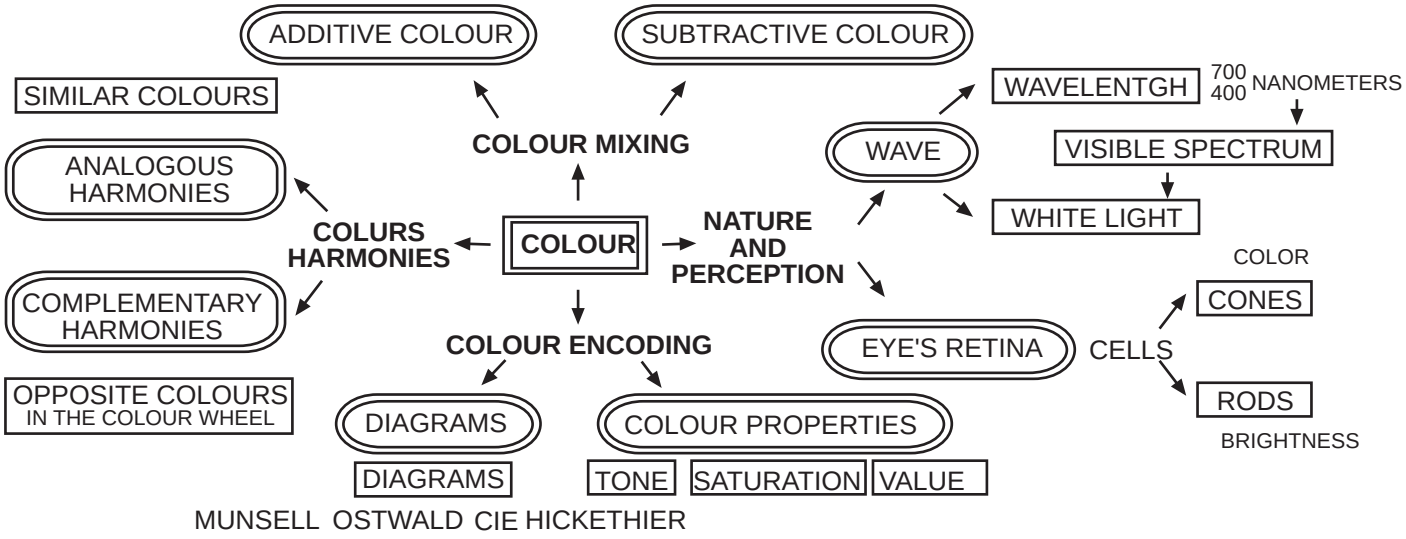


THE DOT
Dot: It is the smallest visual element, the dot is a visual element and can have different characteristics as color, size, intensity or texture.
Dot appearances: The dot is usually a small circle, but it can vary in size and shape depending on the tool with which it is produced or the visual medium in which it appears, for example in digital images it is a square (pixel).
The Dot Expressiveness: The dot can be grouped to form structures with volume, texture, chiaroscuro, etc.. By varying its characteristics of shape, size and color it can change the expressiveness of an image.
The dot in the composition: Depending on the situation of the dot in the plane, different sensations can be created.

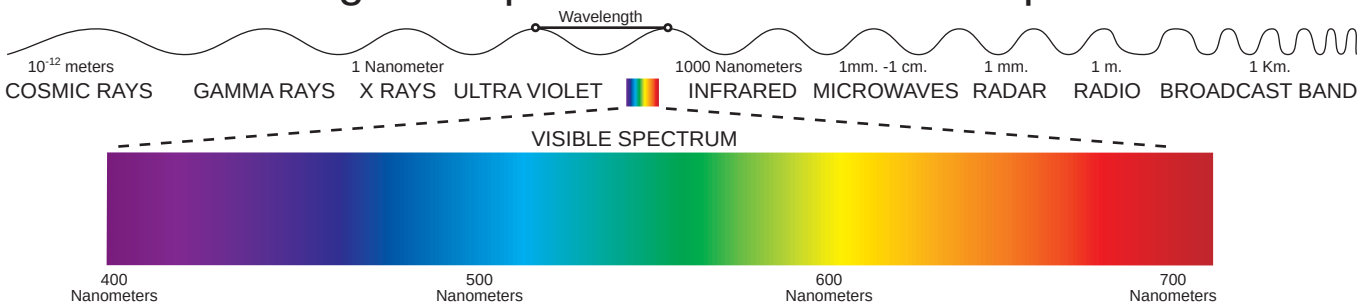
THE LINE
Line: It is defined as a moving point. As well as the dot, the line may contain very different features, especially: thickness, color and intensity.
Expressiveness of the line: Depending on its tracing, path and other features the line can transmit different sensations. When the thickness and intensity of the line is controlled depending on the different sensations that can produce is called "sensitive line".
Uniform and objective line:It is a type of line that seeks to give clear and sharp information, without doubts, questions or interpretations.
Modulated and subjective line: It's another name for the **sensitive line**. Combining different thicknesses, colors and intensities, you can get a multitude of expressive intentions.
The line and composition: The lines, depending on their position on the image and its features can suggest different sensations.
Vertical lines: They suggest balance and elevation in compositions.
Horizontal lines: They suggest calm, rest, tranquility and remoteness in compositions.
Skew lines: They suggest motion, instability, unsteadyness and tension in compositions.
Curved lines: They also suggest movement in compositions.
Lines converging on one point: They give the sense of unity and expansion.

THE PLANE
The plane: Visually defined by its shape, size, color and texture. When we talk about the visual plane we refer to the spots with different shades, shapes or textures in the images. The plane can be described or defined by contrasts, outlines, different colors or textures.
Three-dimensional sense of the plane: Being a two-dimensional element, the plane may suggest certain visual sensations as a resulting three-dimensional sensation, an approach, distance or volume.
Size contrasts: Increasing or decreasing the plane in size produces a sense of depth in depictions.
Tone or value contrasts: Warm colors are perceived as closer while cold ones can be seen as distant. Indoors clear planes are enhanced, while outdoors dark planes atract more attention.
Texture contrasts: Smooth and homogeneous textures express a sense of remoteness, while rough and irregular textures express a feeling of closeness.
Overlapping: When a shape obviously overlaps with another it seems to be ahead of the other that is left behind , covering it partially, then creating the sense of depth.
Shading: The shading of shapes in drawings or artworks helps them to be perceived with certain volumes.
The plane in the composition: Depending on the disposition of the spots or brush strokes, the images can achieve different visual effects similar to those that the lines get
The plane in space: Sculpture, architecture or engineering are disciplines that use the plane constantly. Curved planes suggest the organic and natural while orthographic planes express order and sense of balance.

TEXTURE
Texture: Visual and tactile quality of the objects' surface. Generally surfaces have color and texture qualities which do not hold a relationship with each other. In art, texture provides expressive qualities while in architecture, engineering or in the textile disciplines, textures provide another kind of qualities to materials.
Tactile texture: It is the one which can be perceived through the sense of touch and sight.
Visual or graphic texture: Texture that can only be perceived through the sense of sight. Visual textures are usually similar to tactile textures.These can be obtained through various techniques such as scratching, rubbing, stenciling or stamping.
Hatching: Shading an area or shape with closely drawn parallel lines. When there are two or more sets parallel lines in different directions it is called **Cross hatching**.
Stippling:Mark a surface, shape or area with numerous small dots
Artificial textures: Those textures created by humans. They can be usually defined by the material that composes the surface shown.
Natural textures: Those belonging to or appearing like textures of nature. Some artificial textures are similar to natural textures and some natural textures may look more geometric and artificial but they are actually natural.
Color and light in texture: The color or color combination can have a decisive influence on the perception of textures. Side lighting enhances any texture or relief, as well as frontal lighting softens and makes more unnoticeable both the texture and the relief.



Electromagnetic spectrum versus Visible spectrum



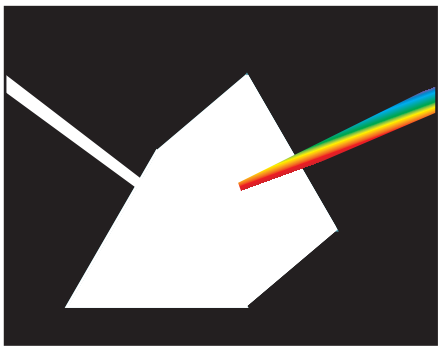
Colors in light, Newton's Prism and Additive mixing.

It's said that Isaac Newton discovered the **white light** which contains itself all colours together by chance as the discovery of gravity. In the past it was believed that the eyes **emited** some short of **rays** that **scanned** reality for us to be seen.

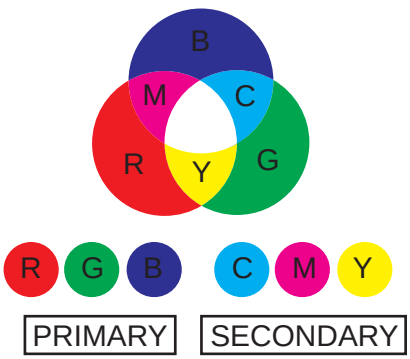
Later it was thought that light travelled to our eyes to show us what we see. By then Newton randomly realized a thin ray of white light was **decomposed** by a **glass prism** into the multiple colours that form the **visible spectrum**. That was the **Additive colors** theory seed.

Adding red light to green light a **yellow light** is obtained. A blue light and a green light produce a **cyan light.** And red and blue lights together form a **magenta light**. Adding all the three Additive **primary** colours (Red, Green and Blue) together produces the white Light.

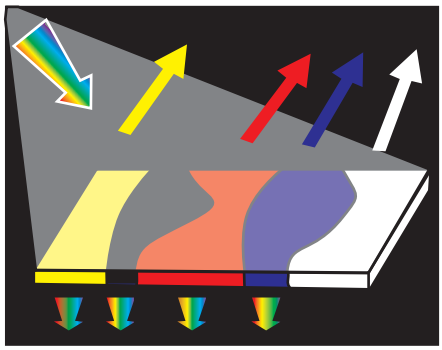
So white light comes into contact with the objects **surfaces** which **absorb** part of the colors contained. The rest of the colored rays are reflected and come into our eyes for us to **perceive** the colours of the objects. Those are the surface properties of **absorption** and **reflection** of light. The materials giving the colored **rays** different directions when the light goes through is called **refraction property,** and that's what happened to Newton's Prism as well as to the rainbow.



Newton's Prism and light refraction



Additive colours mixing

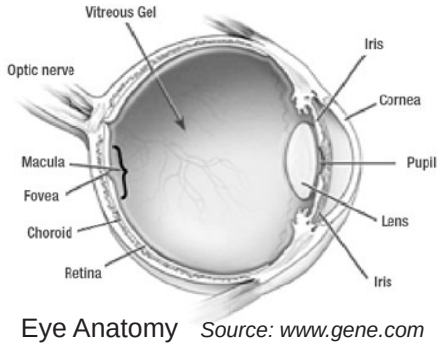


Absorption and Reflexion of light

Perception of color. The eye.

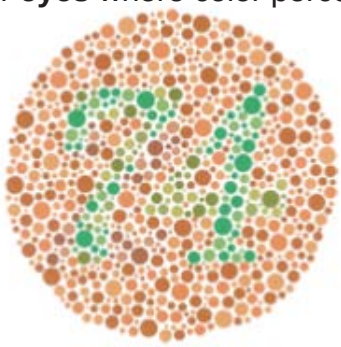
http://www.ted.com/talks/neil_harbisson_i_listen_to_color.html
Click here or scann the QR code on the right to watch a video about Neil Harbisson. A color blind person who can hear the colors. On the left you can see **Neil Harbisson's website**.
http://www.harbisson.com/

The process of **color vision** starts by a **source of light** that sends the **rays of light** to the objects. Once the **objects surfaces reflect** the light, or part of it, travels to our **eyes** where color perception starts.



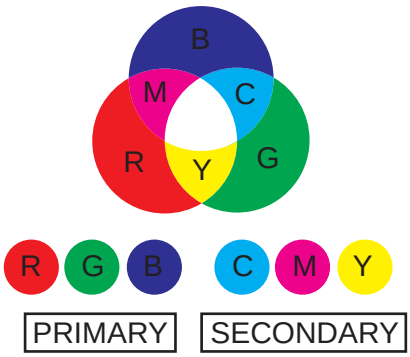
Eye Anatomy *Source: www.gene.com*

The **eye** is a sphere that lets the light get in through the **pupil**. The **iris** opens or closes depending the amount of incoming light to let in the right amount of light to be projected over the retina. The image gets projected over a layer called **retina** which is over most of the inside surface of the eye. The retina is composed by two kinds of cells.


Ishihara Test Plate 9 *Source: wikipedia*

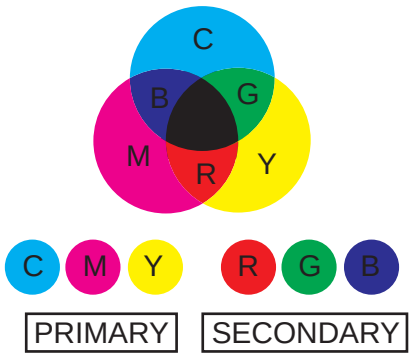
Rods are in charge of registering the light. Rods are the ones that work better at dark and they are not specialized in colors. **Cones** are the cells in charge of registering color. There are three types of cones, each of them has the task to register the amount of one of the **additive primary colours**. So there are cones that register the green, others that register the red and the ones that register the blue light. It is exactly the same system that old televisions used to show the images over their screens. Once the retina cells register, through chemical reactions, the **incoming colored rays** send the information as electrical messages to our brain through the **optical nerve**.
There are people whose **retina's cells** have different short of **defects or lacks**. Those people cannot get to perceive certain colours. Most of them cannot see red and green properly so they cannot tell the difference between them. There are other cromatic vision defects that don't let people see some other or any colors.This disease is called **color-blindness**.

Additive versus subtractive colors



Additive colours mixing

Subtractive colors, opposite to additive colors, work as we always thought colour combinations work. The **three primary: Magenta, cyan and yellow,** cannot be obtained through the mixture of any other color. These are the purest colors and by mixing them in equal parts we obtain the three **secondary: Red, Green and Blue.**



Subtractive colours mixing

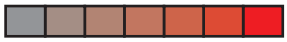
A **subtractive color model** comes from mixing different types of **dyes**, **inks**, **paint pigments** or **natural colorants** to create a wider **range of colors**. Each color is the result of absorbing some wavelengths of light (colored lights) and not others. The color that a surface shows depends on which parts of the visible spectrum are not absorbed and therefore reflected.

The primary additive colors (light) are the secondary subtractive colors (material) and vice versa. When we mix a primary and a secondary color we get the **tertiary colors** in both systems, additive and subtractive.

Subtractive is the given name to this type of colors because when we add more colors to the mixture we substract luminosity, so we obtain black. Black is the result of mixing the three subtractive primary colours in equal parts, even though that is sometimes difficult in real practice. Subtractive colors is the system we notice and experiment when we produce materials or we paint a surface using paint, dyes or coloured pencils. Let's say subtractive colours are the chemical aspect of colour. While Additive colours are the physical aspect of colours that travels through the air to our eyes as rays of light.

Color qualities

Besides Newton's discoveries and the additive and subtractive theories, color can be studied and clasified in a scientific way. This branch of science is called colorimetry and this teory is based on a method to describe colours by three features. While every color contains a specific amount of the three primary, and that is a way to describe them, colors can also be described by three other qualities:


HUE

SATURATION

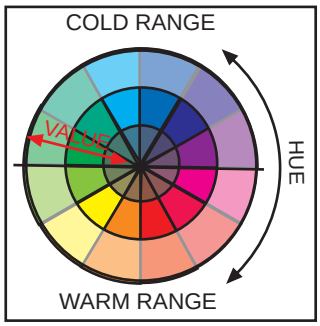
VALUE

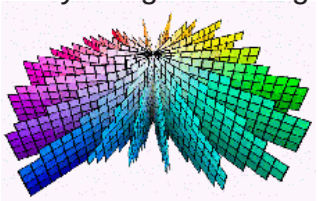
Hue: The specific quality by which a color is known, it is the color's name. Also called **tone or tint**. Each tone corresponds to a specific wavelength.
Value: Amount of lightness or darkness (black or white) a color has. Also called **brightness or lightness**.
Saturation: Degree of purity of a colour. The higher pureness (less mixing colors) the higher color saturation. The little saturated colors are seen like grayish. Also called **chroma**.

Color systems or models

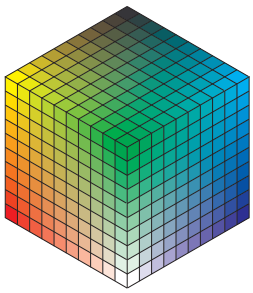
Code or chromatic system: They are maps of the coded color, sorted according to different criteria such as their position in the visible spectrum or their three qualities.

Color wheel: A circular diagram where the three primary colors are placed as far as possible from each other. Mixed the primary, secondary are shown in between each primary. Tertiary colors can also be observed between primary and secondary colors. It provides easy location of complementary colors, opposite to each other. Warm colors and cold colors can be determined easily filling each range half of the color wheel.

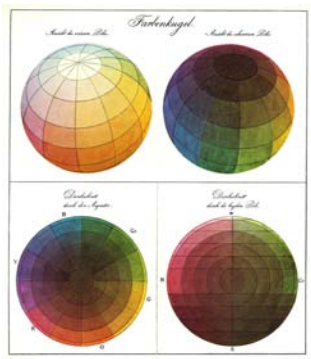



Spread Munsell Solid *Source: www.codeproject.com*

Munsell system: It is a solid that arranges the colors attending to three axes, each of them representing the three qualities of colour.

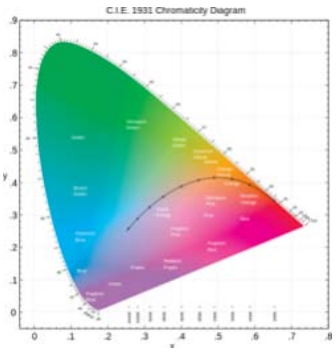


Hickethier cube: A three-dimensional color map in which the colors are distributed. Each edge contains ten divisions such that each square face contains 100 colors and the whole surface, formed by six squares, shows 999 colors. Vertices show the three primary, the three secondary, black and white. So all the surface shows variations in hues and values. Saturation decreases in the polihedron's inner part.


Philipp Otto Runge Sphere
Source: http://commons.wikimedia.org/

Otto Runge's Sphere: It has twelve pure colours around the equator, the three primary, the three secondary and six tertiary located between the primary and secondary. White and black, highest and lowest values, form opposite poles.

CIE Diagram: CIE is an acronym in French for "International Commission of Illumination" which is a organization that made a diagram in two dimensions like a triangle which reflects only two qualities of color: tone and saturation. In its three "vertices" we can find the green, red and blue violet, additive primary colors.



CIE DIAGRAM Lab space
Source: http://commons.wikimedia.org/


Ostwald double cone
Source: http://www.daicolor.co.jp/english/color_e/color_e01.html

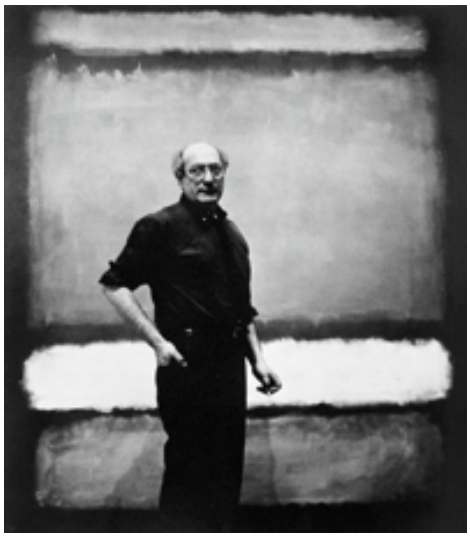
Ostwald double cone: Friedrich Wilhelm Ostwald was a Nobel Prize in Chemistry in 1909. His model shows the three color qualities: hue, lightness and saturation. The color wheel with saturated colors on the outside and less saturated colors on the inside is located in the middle circle. The vertical axis is formed by a gray scale from black to white that are located in the double cone vertices.

More information about color models click **www.colorsystem.com** or scan the QR code.

Mark Rothko's expresiveness

Marc Rothko, born in 1903, started to paint in his twenties. He took about twenty years painting **figurative images**. But in the fourties he lost his interest for painting the **appearance** of the world based in his thought that art is an experience for the artist and the **viewer**.He wasn't really interested in **abstract images** or in colors but in the experience he lived when painting an artwork as well as in the viewer's **impressions** when apreciating it. He thought his current world subjects needed to be **depicted** that way to be explained properly. And with that purpose he used colors and **abstraction**.

Rothko did not like his audience to know much about the observed artworks in order to have them taking their own experience and conclusions without outer influences. He painted what the art critics called "**multiforms**" which were **colored spots** painted on big format **canvases**, sometimes about three meters tall. These **colored shapes** seem to be integrated with the **canvas** and need to be **observed**, because of their big size, creating view directions, Rothko called "**plasticity**" this feature of his art.



Mark Rothko

Source:pictify.com

Scann the QR code to watch **Mark Rothko's collection in MOMA**.

http://www.moma.org/collection/artist.php?artist_id=5047

Black and Gray. 1969

Source:wikipedia.com

Homage to Matisse 1954

Source:www.thecityreview.com

Rothko's Color stages

In the first stage of Rothko's abstract painting, **saturated or bright colors** were the main characters, later he focussed on **warm ranges** such as reds, oranges, and yellows but keeping the strategies of highly **contrasted colors** using sometimes **cold and warm contrasts**. After those two stages he started using **darker hues**, such as grays, dark warm colors or **coffee tones** but still making use of **contrasts and analogies**. Finally, late sixties, and beginning of the seventies, during the last two years of his life, he ended up painting in black, gray and very dark tones. Rothko's artworks are really difficult to be appreciated in **prints**, being the originals as big as they are and showing such a delicate and accurate use of color.

Rothko's artworks have broken records of selling prices. In 2005 "Homage to Matisse" was auctioned for 22.5 Million Dollars. In 2012 "Orange, Red, Yellow" was sold for 86.9 Million

Orange, Red, Yellow. 1961

Source:wikipedia.com

COLOR HARMONY

Harmony: It deals about the way to combine colors that match well with each other. There are different ways to combine colors in a good way that the final result looks good, mainly contrasts and analogies (analogous colors). Most of the harmonies are based in chosen colors out of the color wheel.

Contrast: This is the opposite concept of analogy, it is the relationship between different colors in which mixtures colors are not repeated so they look way too different. The most striking contrasts are those formed by complementary colors and these combinations are also called **complementary color harmonies**.

Ananologous colors harmony: They are achieved by using colors close in the color wheel. These harmonies can be created with pure colors varying degrees of saturation, tone or value.

EXPRESSIVENESS OF THE COLOR

Warm colors: Besides warmth they convey feeling of liveliness and closeness.

Cold or cool colors: In addition to the cold feeling, they transmit calmless, stability and distance.

Visual sensations: It is said that human vision distincts better yellow among other colors, as opposed to red and green that seem better integrated or confused with the chromatic surrounding.

Perception of color contrasts: Dark on light hues are better perceived than light on dark. A contrast that seems to be the most striking is the black on yellow.

COLOR

Color: It's a perteption. It is the result of the light received on the retina cells, sent through the optic nerve as electrical stimuli that interpret the brain.
Retina: Layer of photoreceptor cells inside the eye, rods and cones, which are responsible for registering the light that comes from the outside.
Cones: Cells in the retina of the eye that transmit to the brain the sensations of color. There are three types of cones, one for each primary color of light, cones that record red, cones that register green and cones that record the blue .
Rods: They are the cells in the retina responsible for recording and transmitting light sensation to the brain.

LIGHT AND COLOR

Electromagnetic spectrum: The set of electromagnetic waves that travel through the air.
Visible spectrum: The set of electromagnetic waves that the human eye perceives.They are perceived as colored lights and the color depends on the wavelength. For a wave to be visible its wavelength must be between 400 and 700 nanometers.
White light: Sunlight is considered the ultimate white light. The white light meets all visible wavelengths by the human eye. In conclusion, it is composed by the mixture of all the colored lights.
Newton's Prism: It is also called a dispersive prism. An experiment conducted by the scientist who gave it its name. He demonstrated that the white light passing through a triangular prism of glass is decomposed (refracted) in all the spectral colors.
Refraction of light: The change of direction of a wave passing from a material medium to another. This happens in Newton's prism when white light passes through it artificially. In a natural way, when sunlight travels through the atmosphere and turns into a rainbow which is a visible spectrum that arises naturally.
Light absorption: The physical property which has the object surfaces to absorb part of the received light. Depending on the surface physical qualities these absorp certain wavelengths and reflect others. A surface that we perceive as black actually absorbs all wavelengths (all colored lights).
Reflection of Light: The physical property which have the surfaces of objects to reflect some of the received light. Depending on the surface physical qualities these absorb certain wavelengths and reflect others. A surface that we percieve as white actually reflects all wave magnitudes (all colored lights).

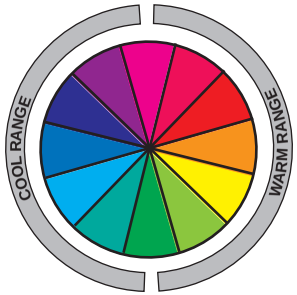
ADDITIVE MIXING AND COLOR LIGHT

Additive colours: The name given to the mixture of all the colored lights resulting in white, it is so named because the colors added to the mix add light to the result.
Primary additive colors: Red, Green and Blue. In English this mixture of colors is called RGB and this name is found in many electronic devices and software related to images. These lights cannot be obtained by mixing others. The mixture of the three primary additive colours results white
Secondary additive colors: They are the Magenta, Cyan and Yellow and they are the result of mixing equal parts the three primary lights in pairs. Red + Blue = Magenta, Blue + Green = Cyan, Green + Red = Yellow.
Color filters: Filters let through the radiation corresponding to the color we see the filter. A green filter lets through the green (yellow and green radiation) and a red absorbs all but red and orange to get through the filter.

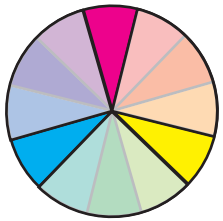
SUBTRACTIVE COLOR:

Pigments: dyes, normally in powder form, which are extracted or achieved by chemical or natural proceses from mineral, vegetable and various materials or substances which are used for dying or printing paint.
Binder or binding medium: These are substances used to amalgamate or bind and give unit the pigments in the paint. The binder for oil paint is lineseed oil, tempera is yolk, watercolors is gum arabic, ect.
Susbtractive colours: Are material colors. If you add them to the mixture, light is subtracted achieving black.
Primary subtractive colors: Are Cyan, Yellow and Magenta. These can not be obtained by mixing other subtractive colors.
Secondary subtractive colors: They are the result of mixing equal parts of the three primary colors in pairs; Cyan Yellow = Green, Yellow, Magenta = Red, Cyan+Magenta = Violetish blue.
Tertiary colors: They are always the result of mixing a primary color and secondary, on the color wheel they are arranged opposite ways (in front).
Complementary colors:They are pairs of colors such that the complement of a primary color is one which is composed of mixing the other two primaries. The mixture of two additive complementary colors approaches to white, while the mixture of two subtractive complementary approaches to black.

COLOR WHEEL



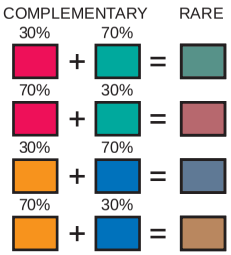
PRIMARY



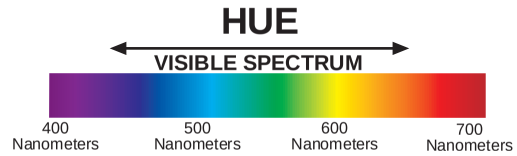
SECONDARY

TERTIARY

RARE COLORS



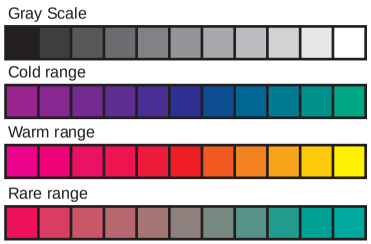
HUE



- SATURATION +

- VALUE +

RANGES



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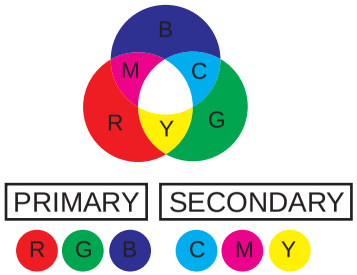

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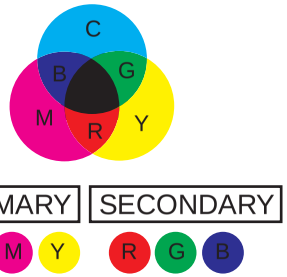
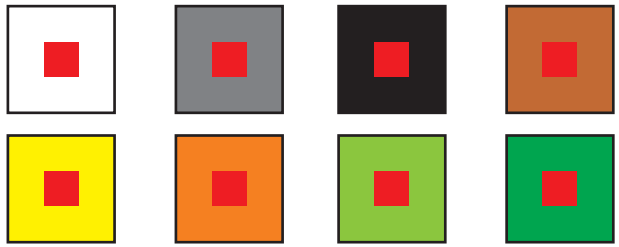
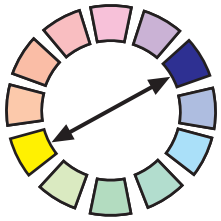


CONTEXT / SIMULTANEOUS CONTRAST

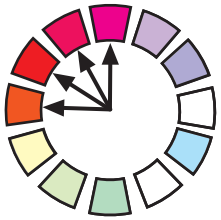


COLOR HARMONY

COMPLEMENTARY

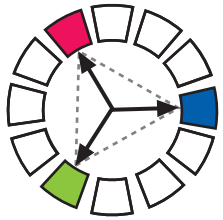


ANALOGOUS

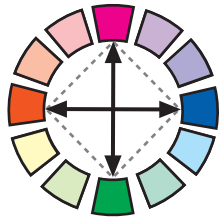


SPLIT COMPLEMENTARY

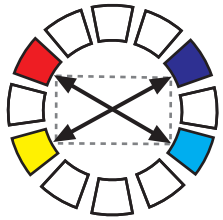
TRIAD



DOUBLE COMPLEMENTARY



SQUARE



RECTANGULAR

COLOR SUBJECTIVE SYMBOLISM

RED: Intense, fire, blood, energy, war, danger, love, passionate, strong, ambition, agression, alertness, braveness, dominating, dramatic,emotional, energetic, erotic...
PURPLE: Royalty, power, nobility, wealth, ambition, dignified, mysterious, aristocracy, art, anxiety, beauty, compassion, conflict, dream, dignity, enigma, extravagance...
YELLOW: Sunshine, joy, cheerfulness, intelect, energy, attention-getter, activity, aspiration, alertness, brightness, richness, happiness, idealism, imagination...
BLUE: Sky, sea, depth, stability, trust, masculine, acceptance, authority, balance, calmness, coolness, cooperation, culture, depression, distance, honesty, ...
GREEN: Nature, groth, fertility, freshness,healing, safety, money, adventure, balance, efficiency, cleanliness, faith, freedom, generosity, good luck, poison, health,outdoors...
ORANGE: Warm, stimulating, enthusiasm, happiness, success, creative, autumn, action, appetite, assurance, exagerated, competent, cheerful, tiring, outrageous...

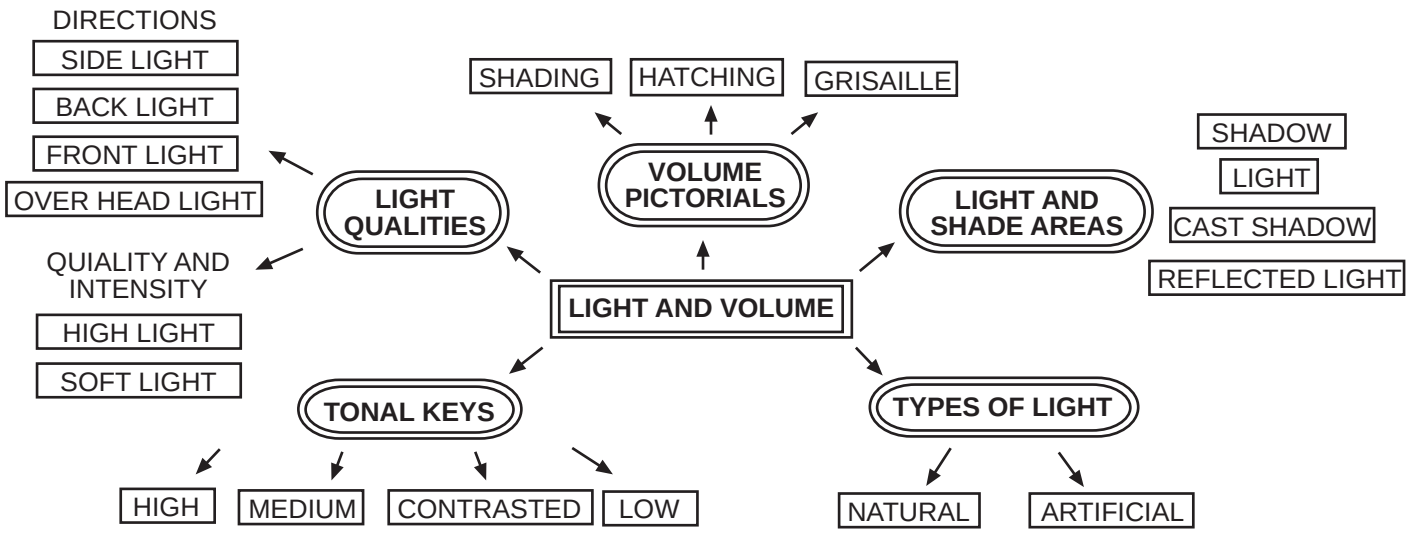
Scann the QR on the right or **click here** to access the COLOR playlist in laslaminas.es youtube channel.

Scann the QR on the right or **click here** to access the COLOR gallery in laslaminas.es/Pinterest

Scann the QR on the right or **click here** to access the COLOR secction in laslaminas.es.

laslaminas.es

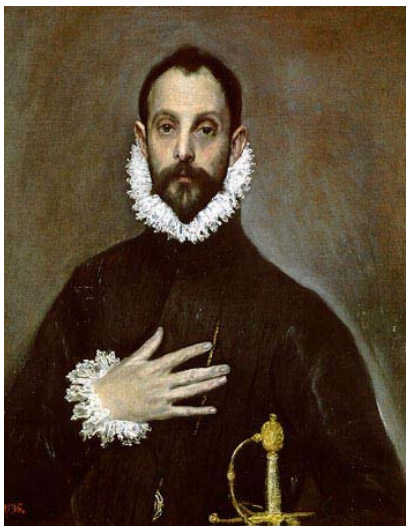
COLOR THEORY QUICK GUIDE



EL GRECO VERSUS SOROLLA AND THE TONAL KEYS

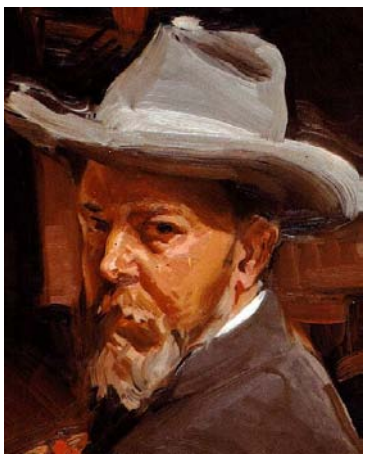
El **Greco** was a greek artist working in Spain. He was a Manierist painter whose artwork is particularly known by the use of light. He Used normaly **low** or **very contrasted** tonal keys, his type of paint is called **Tenebrism**. In low tonal keys black and dark hues are used while in contrasted the high and the low tonal keys are combined at a time. His artwork called **"The knight with his hand on his breast"** was restorated in 1996 showing surprisingly afterwards a higher tonal key than what it previosusly showed.

Knight with his hand over his breast 1584. Before restoration.
Source: http://commons.wikimedia.org/



After restoration.
Source: http://commons.wikimedia.org/

Walk on the beach. 1909. Joaquin Sorolla
Source: http://commons.wikimedia.org/



Joaquin Sorolla Self portrait. 1900
Source: http://www.museumsyndicate.com/images/6/51337.jpg

Joaquin Sorolla was a spanish painter known by opposite qualities to el Greco. He ususally painted in high tonal keys depicting very clear scenes. The **Mediterranian light** is one of his main themes even though he painted artworks about all regions of Spain using clear and bright tones in most of his paintings.

A **High Tonal Key** is a quality of an artwork which has very clear tones and in which whites are usually the main characters. A **low tonal key** artwork is the opposite, it shows very low and dark tones, a while black is ususally the main colour. A **contrasted tonal key** is what converges both tonal keys so it shows very hihg and low tones. Tonal keys create moods for the artworks and help to achieve an environmental effect.

TYPES OF LIGHT: INTENSITY AND DIRECTIONS

High light and **soft light** can be used for creating moods or visual impressions. So light is a very important aspect in any pictorial in order to achieve any goal wanted.
The directions of light produce different **visual effects** and types of **cast shadows,** they can also **enhance volumes and shapes**. **Directions** of light are given in Natural light and can be set up with artificial light. The main direction names are **Front** light, **Side light**, **Back light** and **Overhead light**. **Intensity** and **quality** of light can also produce a **high light** which produces **contrasted shadows** while **soft light** barely produces them.

NATURAL LIGHT AND LIGHT DIRECTIONS IN ROUEN CATHEDRAL BY MONET

Monet was an **impressionist** painter. Impressionists tried to capture the moment and its light. Most of the time they thought the light is as important as the object itself. With that purpose Impressionist painters used **gestual coloured brush strokes** using new pigments from their times.
When Monet painted the **Rouen cathedral's facade** he had already painted different light versions for other subjects such as **haystacks** with different types of inciding light, but this time he took it more seriously. He rented rooms surrounding the cathedral and painted up to thirty versions in three years.

Rouen Cathedral, Facade (sunset), 1892-18944. Monet
Source: http://en.wikipedia.org

Rouen Cathedral, Full Sunlight 1894. Monet
Source: http://en.wikipedia.org

Take a look at Monet Haystacks series in wikipedia by **clicking on this link** or scan the QR code.
http://en.wikipedia.org/wiki/Haystacks_(Monet)

He tried to depict how light changes over the cathedral during different times on the day, different year seasons and all kinds of weather. It's been said that Monet might have used the **camera obscura** technique to do this paintings and in that case light would have had two roles as depicted and projecting.

NATURAL OUTDOORS AND ARTIFICIAL INDOORS LIGHT

The first and main way to sort types of light is attending to its **source** by Natural or Artificial. **Natural** Light, produced generally by the sun, is **fleeting** and **difuse** and varies on direction and intensity depending on the season of the year, the time of the day and even the weather. Impressionist artists like **Courbet** and other current painters who paint **outdoors** need to control painting in **small periods of time** for that reason.
Artificial light is permanent and can hold different intensities directions and characteristics.It is very important in photography, interior decoration, television film making and many other disciplines.

The Meeting. 1854. Courbet
Source: http://commons.wikimedia.org/

Edward Hopper was an American painter influenced by the impressionists. His artworks are likely to show american **costumbrism**, painting **landscapes** as well as **indoors**. When an indoor scene is depicted, different types of light can appear showing different effects.

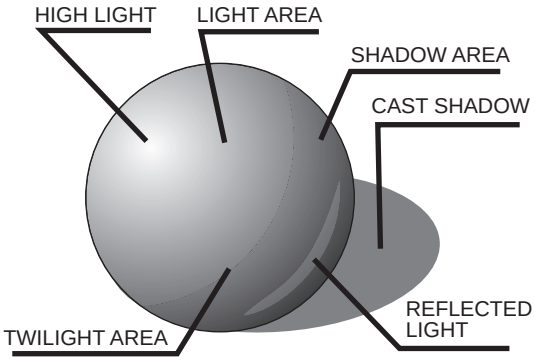
Nighthawks. 1942. Edward Hopper
Source:http://www.ibiblio.org/wm/paint/auth/hopper/

Cassius Marcellus Coolidge was an American painter mostly known for his funny paintings of dogs playing cards, he also shows a very characteristic use of indoors **artificial light**.

A friend in need. 1910. Coolidge
Source:http://commons.wikimedia.org/wiki/File:A_Friend_in_Need_1903_C.M.Coolidge.jpg

CHIAROSCURO AND LIGHT AREAS

When Drawing chiaroscuro objects show a **High light area** where the light hits them with more intensity or proximity, light direction regarding this area is close to perpendicullar. The **light area** is where the object is illuminated, but not as much as on the high light area. The **Twilight area** is where the light incides with a considerable inclination so the surface of the object starts turning into shadow. The **shadow area** is the surface of the object where the light doesn't hit, sometimes there is some **reflected light** from the layout which leans over the volume of the object. The **Cast shadow** is the shilouette of the object projected by the light over layout or other surfaces.



SURPRISING SHADOWS

Shigeo Fukuda, John Lewis, Tim Noble & Sue Webster and many other artists have made different shapeless sculptures with trash or other materials such as silverware, paper, wire or toys which projected on walls show figurative surprising cast shadows.
Ellis Gallagher is an original street artist known for outlining with chalk cast shadows at night.

Check out **Ellis Gallagher web** by clicking on the link or scanning the QR code.
http://www.ellis-gallagher.com/

You can also see **his pictures on facebook** clicking on the link or scanning the QR.
https://www.facebook.com/ellisgallagher/photos

In **this blog entry** cliyou'll find other cool artists and artworks about cast shadows.
http://www.hongkiat.com/blog/shadow-art/


Dirty White Trash (with Gulls), 1998
Source:http://www.timnobleandsuewebster.com/

GOYA'S CAPRICES

There are different techniques to obtain chiaroscuro. A chiaroscuro pictorial can show either a regular shading or a lined shading or hatching showing the textures of lines that fill the dark areas. Grisaille is a good way to create chiaroscuro in any pictorial. But there are other techinques such as painting or engraving. Francisco Goya used engraving to create 80 images called **The Caprices**. These are monochromatic, only using gray scales, so they are a good expample as **chiaroscuro** artworks.


Caprice No. 1 Self Portrait
Source: http://en.wikipedia.org/


No.37 Might not the pupil know more?
http://en.wikipedia.org/wiki/Caprichos

Goya was a court painter painting **portraits** for the spanish royal family. However he also depicted a criticism to the current society of Spain. With that purpose he did 80 **engravings**. An engraving is a technique that consists of marking a metallic surface that later is used as a **template** to **stamp** the artwork. There are different variations of this technique. **Aquatynt** helps shadowing an artwork leaving **no textures** shown but plain shades, aquatynts look like watercolours but monochromatic. **Etching** or **dry point** is used to create lines in engravings so they make possible to obtain a **lined shading** or **hatching effect**. Goya combined the three diferent types of engraving or shading to create his Caprices.

In **This wikipedia link** you'll find a description of Goya's Caprices and all the 80 engravings.

TECHNIQUES TO GET CHIAROSCURO

Lined shading or hatching: It consists of assessing the lighting zones through paths. It is usually made with graphite and ink. As the value decreases the lines are closer to each other even getting to interbreed. This appearance is also called striped graphics.
Shading: In this case light and dark areas are not smooth and show no graphics but spots of light and shades.
Grisaille: It is a technique consisting of making the entire surface of the work with a middle value shadow, reserving the clear values or recovering them afterwards. Then the dark areas are determined to be blend with the intermediate values.

TYPES OF LIGHT

Natural light: it usually comes from the sun, but also could come from the moon or the fire. Sunlight is fleeting, produces long shadows early and late in the day and almost no shadows at noon. As hours and seasons of the year go by, shadows and light quality change in direction, size and intensity.
Artificial light: It comes from spotlights or lamps. Its color, intensity varies depending on the source used. It can be arranged and we can use as many sources as needed.

TONAL KEYS

Tone Key: The level of brightness or darkness that exists in the images.
High tonal key: When an image has more lighted areas than dark. Bright tones, high values and white stay. It occurs when the scene is very bright. For these images it is advisable to leave some dark areas not so, by contrast, light is enhanced.
Low tonal key: It is caused by poor lighting, the image is dim and dark. Dark tones, black and low values are predominant.
Contrasted tonal key: It occurs in images that have been brightly lit and also dark areas. The shapes are usually seen clearly through the boundaries marked by lights and shadows.

QUALITIES OF THE LIGHT

Qualities of light: Beyond color, light is marked by a direction, a quality and an intensity. These are all consequences of the light sources.
Light Direction: Depending on the focus position and the scene or content of light, it will come one direction or another. The direction of light can change the appearance of objects or spaces and helps elements to be received with the desired intent.
Front light: The light source is facing the object or scene. Decreases the sense of relief, volume or depth and it almost doesn´t produce any shadows.
Sidelight: It boosts or increases the feeling of volume and relief, it let us appreciate the textures. It produces lots of cast shadows. Depending on the position and intensity passes smoothly over the surfaces creating degraded shadows or producing strong contrasts.
Overhead light: Its spotlights are located on the scenes or objects so that the rays fall perpendicularly on the object and depending on the volumes only cast shadows are shown at the bottom of the objects. It produces in elements a certain sense of flatness.
Backlight: The light source is behind the object so that the object on stage is observed as a dark silhouette. The background is usually much brighter than the object.

INTENSITY OF LIGHT

Hard Light: The spotlight emits a bright light or is very close to the illuminated surfaces, the greater the intensity and proximity of the source the better splendor and brightness on the objects and sharper and more defined shadows.
Soft Light: The spotlight is far from the scene or the elements, or it doesn't impact on them directly. It takes place on cloudy days or in areas where the sun does not reach directly. This kind of light doesn´t praise volumes and the shadows that it produces are very vague or nonexistent.

VOLUME REPRESENTATION WITH CHIAROSCURO

Chiaroscuro: The study of light, bright and dark areas, by any graphic technique of the model or scene.
Tonal values: These are the different degrees of illumination or shadows that appear in a depiction.
Light area: The area of the object that receives the light directly and thus is more iluminated in the depiction. Depending on the direction of light and the proximity of the spotlight this area can show greater or lower intensity.
High light: It is a small specyfic area located generally in the light area where light hits the object with stronger intensity of all the depiction representation. It is usually the only clear white spot in the drawing.
Twilight area: It receives light directly but with a considerable inclination, so the surface is illuminated but with less intensity than the light area itself.
Shadow area: they are the parts of objects or bodies that do not receive light directly from the focus. If the surface is not flat or curved this zone melts or blurs with the Twilight area, if the surface contains faces with edges its limit is perfectly defined.
Reflected Light: Sometimes the layout reflects part of the light on the shadow area marking the volume of the object.
Cast shadow: They are shadow areas caused by interruption of the rays of light from the bodies or objects that are usually darker than the shadow areas.