HANDOUT: ART 101
VISUAL ELEMENTS AND PRINCIPLES OF DESIGN

The Point

A **point** is the visual element upon which all others are based. It can be defined as a singularity in space or, in geometric terms, the area where two coordinates meet. When an artist marks a simple point on a surface, (also referred to as the ground), they immediately create a figure-ground relationship. That is, they divide the work between its surface and anything added to it. Our eyes differentiate between the two, and their arrangement has everything to do with how we see a final composition. The point itself can be used as a way to create forms. For example, Pointillism is a style of painting made famous by the French artist Georges Seurat in the late nineteenth century. He and others in the Pointillist group created paintings by juxtaposing points—or dots—of color that optically mixed to form lines, shapes and forms within a composition. Look at a detail from Seurat's La Parade de Cirque to see how this works. His large canvas Sunday Afternoon on the Grande Jatte is a testament to the pointillist style and aesthetic. Its creation was a painstaking process but one that generated new ways of thinking about color and form.

Georges Seurat, La Parade de Cirque,

detail, 1887-89. The Metropolitan Museum of Art, New York. CC BY-SA

Definitions and Qualities of Line

Essentially, when you put two or more points together you create a line. A line can be lyrically defined as a point in motion. There are many different types of lines, all characterized by their length being greater than their width. Lines can be static or dynamic depending on how the artist chooses to use them. They help determine the motion, direction and energy in a work of art. We see line all around us in our daily lives; telephone wires, tree branches, jet contrails and winding roads are just a few examples. Look at the photograph below to see how line is part of natural and constructed environments.

Photo by NASA. CC BY-NC

In this image of a lightning storm we can see many different lines. Certainly the jagged, meandering lines of the lightning itself dominate the image, followed by the straight lines of the light standards, the pillars holding up the overpass on the right and the guard rails attached to its side. There are more subtle lines too, like the gently arced line at the top of the image and the shadows cast by the poles and the standing figure in the middle. Lines are even implied by falling water droplets in the foreground.

The **Nazca lines** in the arid coastal plains of Peru date to nearly 500 BCE were scratched into the rocky soil, depicting animals on an incredible scale, so large that they are best viewed from the air. Let's look at how the different kinds of line are made.

Diego Velazquez's Las Meninas from 1656, ostensibly a portrait of the Infanta Margarita, the daughter of King Philip IV and Queen Mariana of Spain, offers a sumptuous amount of artistic genius; its shear size (almost ten feet square), painterly style of naturalism, lighting effects, and the enigmatic figures placed throughout the canvas–including the artist himself –is one of the great paintings in western art history. Let's examine it (below) to uncover how Velazquez uses basic elements and principles of art to achieve such a masterpiece.

Diego Velazquez, Las Meninas, 1656, oil on canvas, 125.2" x 108.7". Prado, Madrid. CC BY-SA

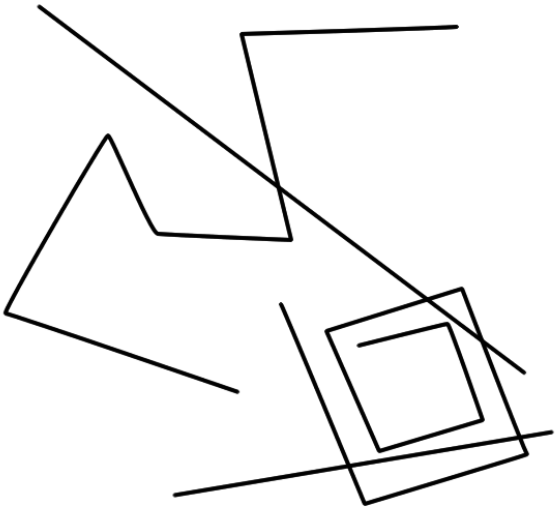
Actual lines are those that are physically present. The edge of the wooden stretcher bar at the left of Las Meninas is an actual line, as are the picture frames in the background and the linear decorative elements on some of the figures' dresses. How many other actual lines can you find in the painting?

Implied lines are those created by visually connecting two or more areas together. The space between the Infanta Margarita—the blonde central figure in the composition—and the meninas, or maids of honor, to the left and right of her, are implied lines. Both set up a diagonal relationship that implies movement. By visually connecting the space between the heads of all the figures in the painting we have a sense of jagged motion that keeps the lower part of the composition in motion, balanced against the darker, more static upper areas of the painting. Implied lines can also be created when two areas of different colors or tones come together. Can you identify more implied lines in the

painting? Where? Implied lines are found in three-dimensional artworks, too. The sculpture of the Laocoon below, a figure from Greek and Roman mythology, is, along with his sons, being strangled by sea snakes sent by the goddess Athena as wrath against his warnings to the Trojans not to accept the Trojan horse. The sculpture sets implied lines in motion as the figures writhe in agony against the snakes.

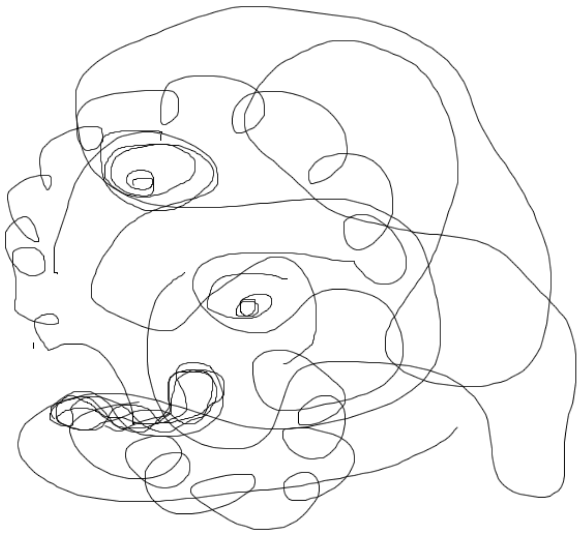
Laocoon Group, Roman copy of Greek original, Vatican Museum, Rome. Photo by Marie-Lan Nguyen. CC BY-SA

Straight or classic lines provide structure to a composition. They can be oriented to the horizontal, vertical, or diagonal axis of a surface. Straight lines are by nature visually stable, while still giving direction to a composition. In Las Meninas, you can see them in the canvas supports on the left, the wall supports and doorways on the right, and in the background in matrices on the wall spaces between the framed pictures. Moreover, the small horizontal lines created in the stair edges in the background help anchor the entire visual design of the painting.



Straight lines, 11 July 2012, Creator: Oliver Harrison. CC BY

Expressive lines are curved, adding an organic, more dynamic character to a work of art. Expressive lines are often rounded and follow undetermined paths. In Las Meninas you can see them in the aprons on the girls' dresses and in the dog's folded hind leg and coat pattern. Look again at the Laocoon to see expressive lines in the figures' flailing limbs and the sinuous form of the snakes. Indeed, the sculpture seems to be made up of nothing but expressive lines, shapes and forms.



Organic lines, 11 July 2012, Creator: Oliver Harrison. CC BY

There are other kinds of line that encompass the characteristics of those above yet, taken together,

help create additional artistic elements and richer, more varied compositions. Refer to the images and examples below to become familiar with these types of line.

Outline, or contour line is the simplest of these. They create a path around the edge of a shape. In fact, outlines define shapes.

Outline, 11 July 2012, Creator: Oliver Harrison. CC BY

Cross contour lines follow paths across a shape to delineate differences in surface features. They give flat shapes a sense of form (the illusion of three dimensions), and can also be used to create shading.

Cross Contour, 11 July 2012, Creator: Oliver Harrison. CC BY

Hatch lines are repeated at short intervals in generally one direction. They give shading and visual texture to the surface of an object.

Hatch, 11 July 2012, Creator: Oliver Harrison. CC BY

Crosshatch lines provide additional tone and texture. They can be oriented in any direction. Multiple layers of crosshatch lines can give rich and varied shading to objects by manipulating the pressure of the drawing tool to create a large range of values.

Crosshatch, 11 July 2012, Creator: Oliver Harrison. CC BY

Line quality is that sense of character embedded in the way a line presents itself. Certain lines have qualities that distinguish them from others. Hard-edged, jagged lines have a staccato visual movement while organic, flowing lines create a more comfortable feeling. Meandering lines can be either geometric or expressive, and you can see in the examples how their indeterminate paths animate a surface to different degrees.

A Line, 11 July 2012, Creator: Oliver Harrison. CC BY

Although line as a visual element generally plays a supporting role in visual art, there are wonderful examples in which line carries a strong cultural significance as the primary subject matter.

Calligraphic lines use quickness and gesture, more akin to paint strokes, to imbue an artwork with a fluid, lyrical character. To see this unique line quality, view the work of Chinese poet and artist **Dong Qichang's Du Fu's Poem**, dating from the Ming dynasty (1555-1637). A more geometric example from the **Koran**, created in the Arabic calligraphic style, dates from the 9thcentury.

Both these examples show how artists use line as both a form of writing and a visual art form. American artist Mark Tobey (1890–1976) was influenced by Oriental calligraphy, adapting its form to the act of pure painting within a modern abstract style described as white writing.

Shapes: Positive, Negative and Planar Issues

A shape is defined as an enclosed area in two dimensions. By definition shapes are always implied and flat in nature. They can be created in many ways, the simplest by enclosing an area with an outline. They can also be made by surrounding an area with other shapes or the placement of different textures next to each other—for instance, the shape of an island surrounded by water. Because they are more complex than lines, shapes do much of the heavy lifting in arranging compositions. The abstract examples below give us an idea of how shapes are made.

Shapes, 11 July 2012, Creator: Oliver Harrison. CC BY

Referring back to Velazquez's Las Meninas, it is fundamentally an arrangement of shapes; organic and hard-edged, light, dark and mid-toned, that solidifies the composition within the larger shape of the canvas. Looking at it this way, we can view any work of art, whether two or three-dimensional, realistic, abstract or non-objective, in terms of shapes alone.

Positive / Negative Shapes and Figure / Ground Relationships

Shapes animate figure-ground relationships. We visually determine positive shapes (the figure) and negative shapes (the ground). One way to understand this is to open your hand and spread your fingers apart. Your hand is the positive shape, and the space around it becomes the negative shape. You can also see this in the example above. The shape formed by the black outline becomes positive because it's enclosed. The area around it is negative. The same visual arrangement goes with the gray circle and the purple square. But identifying positive and negative shapes can get tricky in a more

complex composition. For instance, the four blue rectangles on the left have edges that touch each other, thus creating a solid white shape in the center. The four green rectangles on the right don't actually connect yet still give us an implied shape in the center. Which would you say is the positive shape? What about the red circles surrounding the gray star shape? Remember that a positive shape is one that is distinguished from the background. In Las Meninas the figures become the positive shapes because they are lit dramatically and hold our attention against the dark background. What about the dark figure standing in the doorway? Here the dark shape becomes the positive one, surrounded by a white background. Our eyes always return to this figure as an anchor to the painting's entire composition. In three dimensions, positive shapes are those that make up the actual work. The negative shapes are the empty spaces around, and sometimes permeating through the work itself. The Laocoon is a good example of this. A modern work that uses shapes to a dramatic effect is Alberto Giacometti's Reclining Woman Who Dreams from 1929. In an abstract style the artist weaves positive and negative shapes together, the result is a dreamy, floating sensation radiating from the sculpture.

Plane

A plane is defined as any surface area in space. In two-dimensional art, the picture plane is the flat surface an image is created upon; a piece of paper, stretched canvas, wood panel, etc. A shape's orientation within the picture plane creates a visually implied plane, inferring direction and depth in relation to the viewer. The graphic below shows three examples.

Shape Planes, 11 July 2012, Creator: Oliver Harrison. CC BY

Traditionally the picture plane has been likened to a window the viewer looks through to a scene beyond, the artist constructing a believable image showing implied depth and planar relationships. Landscape with the Fall of Icarus, painted by Pieter Breughel the Elder in 1558 (below), presents us with the tragic ending to the Greek myth involving Icarus, son of Daedalus, who, trying to escape from the island of Crete with wings of wax, flies too close to the sun and falls to earth. Breughel shows us an idyllic landscape with farmers tilling their fields, each terraced row a different plane of earth, and shepherds tending their flocks of sheep in the foreground. He depicts the livestock in positions that infer they are moving in different directions in relation to the "window" of the picture plane. We look further to see a gradual recession to the sea and a middle ground dominated by a ship under sail. The curves of the billowing sails imply two or three different planes. The background of the painting shows the illusion of deep space, the massive cliffs now small in relation to the foreground, and the distant ship near the center as smaller and lighter in tone. In the grandeur of the scene Icarus falls into the sea unnoticed just off shore to the lower right, only his legs still above water. The artist's use of planar description is related to the idea of space and how it's depicted in two dimensions. We will look at the element of space just ahead.

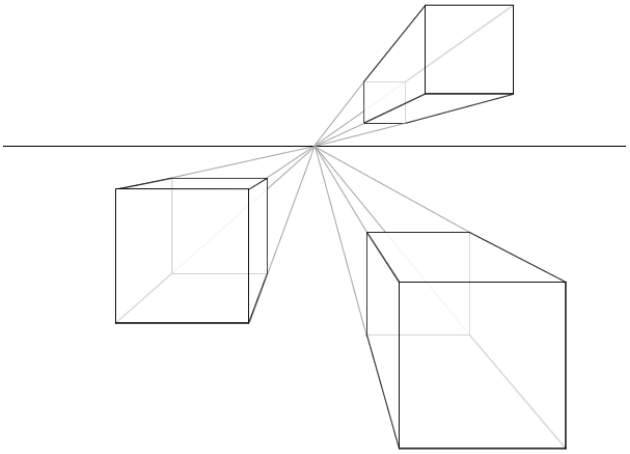
Landscape with the Fall of Icarus, Peter Breughel the Elder, 1558. Musee des Beaux-arts, Brussels. CC BY-SA

Space

Space is the empty area surrounding real or implied objects. Humans categorize space: there is outer space, that limitless void we enter beyond our sky; inner space, which resides in people's minds and imaginations, and personal space, the important but intangible area that surrounds each individual

and which is violated if someone else gets too close. Pictorial space is flat, and the digital realm resides in cyberspace. Art responds to all of these kinds of space.

Clearly artists are as concerned with space in their works as they are with, say, color or form. There are many ways for the artist to present ideas of space. Remember that many cultures traditionally use pictorial space as a window to view realistic subject matter through, and through the subject matter they present ideas, narratives and symbolic content. The innovation of linear perspective, an implied geometric pictorial construct dating from fifteenth-century Europe, affords us the accurate illusion of three-dimensional space on a flat surface, and appears to recede into the distance through the use of a horizon line and vanishing points. See how perspective is set up in the schematic examples below:



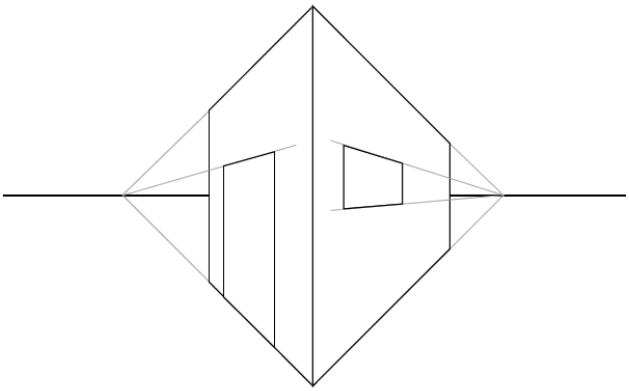
One Point Perspective, 11 July 2012, Creator: Oliver Harrison. CC BY

One-point perspective occurs when the receding lines appear to converge at a single point on the horizon and used when the flat front of an object is facing the viewer. Note: Perspective can be used to show the relative size and recession into space of any object, but is most effective with hard-edged three-dimensional objects such as buildings.

A classic Renaissance artwork using one point perspective is Leonardo da Vinci's The Last Supper from 1498. Da Vinci composes the work by locating the vanishing point directly behind the head of Christ, thus drawing the viewer's attention to the center. His arms mirror the receding wall lines, and, if we follow them as lines, would converge at the same vanishing point.

Leonardo da Vinci, The Last Supper, 1498. Fresco. Santa Maria della Grazie. Work is in the public domain.

Two-point perspective occurs when the vertical edge of a cube is facing the viewer, exposing two sides that recede into the distance, one to each vanishing point.

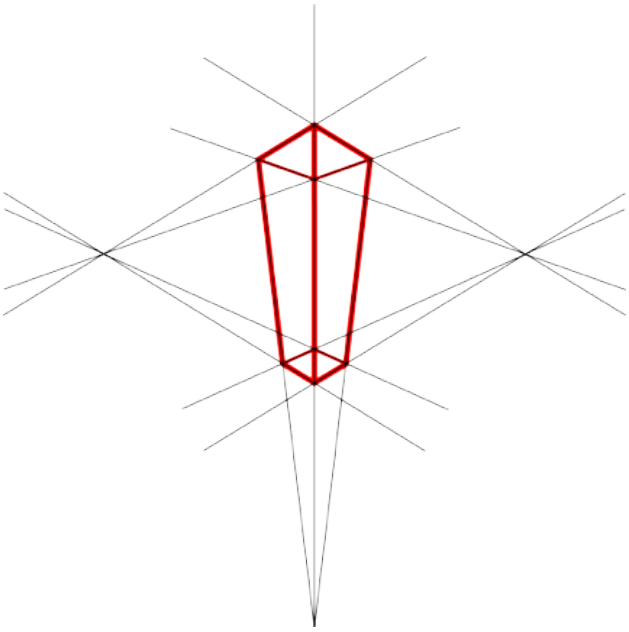


Two Point Perspective, 11 July 2012, Creator: Oliver Harrison. CC BY

View Gustave Caillebotte's **Paris Street, Rainy Weather** from 1877 to see how two-point perspective is used to give an accurate view to an urban scene. The artist's composition, however, is more complex than just his use of perspective. The figures are deliberately placed to direct the viewer's eye from the front right of the picture to the building's front edge on the left, which, like a ship's bow, acts as a cleaver to plunge both sides toward the horizon. In the midst of this visual recession a lamp post

stands firmly in the middle to arrest our gaze from going right out the back of the painting. Caillebotte includes the little metal arm at the top right of the post to direct us again along a horizontal path, now keeping us from traveling off the top of the canvas. As relatively spare as the left side of the work is, the artist crams the right side with hard-edged and organic shapes and forms in a complex play of positive and negative space.

Three-point perspective is used when an artist wants to project a “bird’s-eye view”, that is, when the projection lines recede to two points on the horizon and a third either far above or below the horizon line. In this case the parallel lines that make up the sides of an object are not parallel to the edge of the ground the artist is working on (paper, canvas, etc).



Three-point perspective (with vanishing points above and below the horizon line shown at the same time). Design by Shazz, CC BY

The perspective system is a cultural convention well suited to a traditional western European idea of the “truth,” that is, an accurate, clear rendition of observed reality. Even after the invention of linear perspective, many cultures traditionally use a flatter pictorial space, relying on overlapped shapes or size differences in forms to indicate this same truth of observation. Examine the miniature painting of the Third Court of the Topkapi Palace from fourteenth-century Turkey to contrast its pictorial space with that of linear perspective. It’s composed from a number of different vantage points (as opposed to vanishing points), all very flat to the picture plane. While the overall image is seen from above, the figures and trees appear as cutouts, seeming to float in mid air. Notice the towers on the far left and right are sideways to the picture plane. As “incorrect” as it looks, the painting gives a detailed description of the landscape and structures on the palace grounds.

Third Court of the Topkapi Palace, from the Hunername, 1548. Ottoman miniature painting, Topkapi Museum, Istanbul. CC BY-SA

After nearly five hundred years using linear perspective, western ideas about how space is depicted accurately in two dimensions went through a revolution at the beginning of the 20th century. A young Spanish artist, **Pablo Picasso**, moved to Paris, then western culture's capital of art, and largely reinvented pictorial space with the invention of **Cubism**, ushered in dramatically by his painting **Les Demoiselles d'Avignon** in 1907. He was influenced in part by the chiseled forms, angular surfaces and disproportion of African sculpture (refer back to the Male Figure from Cameroon) and mask-like faces of early Iberian artworks. For more information about this important painting, listen to the following question and answer.

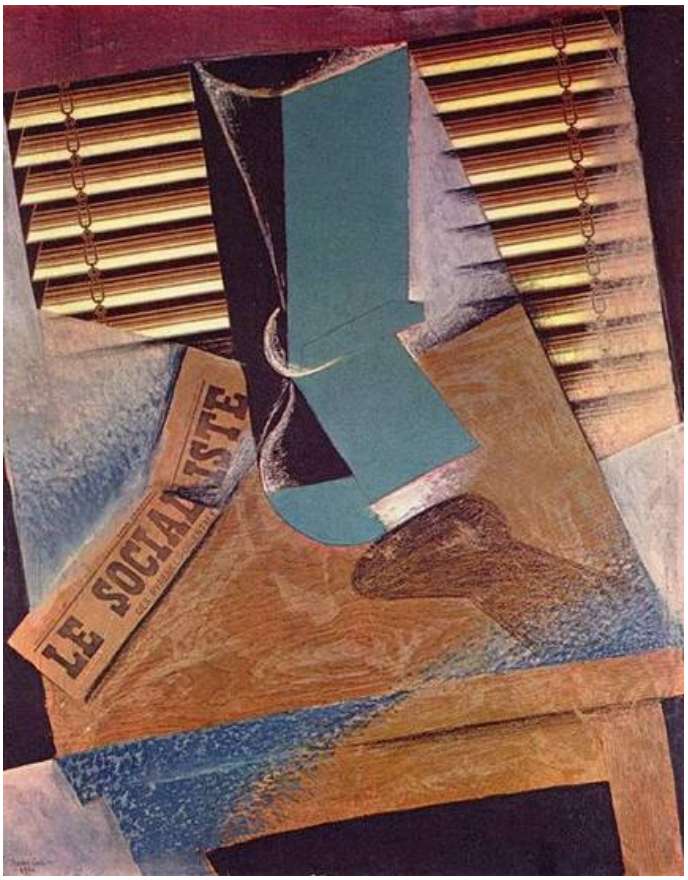
Picasso, his friend Georges Braque and a handful of other artists struggled to develop a new space that relied on, ironically, the flatness of the picture plane to carry and animate traditional subject matter including figures, still life and landscape. Cubist pictures, and eventually sculptures, became amalgams of different points of view, light sources and planar constructs. It was as if they were presenting their subject matter in many ways at once, all the while shifting foreground, middle ground and background so the viewer is not sure where one starts and the other ends. In an interview, the artist explained cubism this way: "The problem is now to pass, to go around the object, and give a plastic expression to the result. All of this is my struggle to break with the two-dimensional aspect*"(from Alexander Liberman, An Artist in His Studio, 1960, page 113). Public and critical reaction to cubism was understandably negative, but the artists' experiments with spatial relationships reverberated with others and became – along with new ways of using color – a driving force in the

development of a modern art movement that based itself on the flatness of the picture plane. Instead of a window to look into, the flat surface becomes a ground on which to construct formal arrangements of shapes, colors and compositions. For another perspective on this idea, refer back to module one's discussion of 'abstraction'.

You can see the radical changes cubism made in George Braque's landscape La Roche Guyon from 1909. The trees, houses, castle and surrounding rocks comprise almost a single complex form, stair-stepping up the canvas to mimic the distant hill at the top, all of it struggling upwards and leaning to the right within a shallow pictorial space.

George Braque, Castle at La Roche Guyon, 1909. Oil on canvas. Stedelijk van Abbe Museum, Eindhoven, Netherlands. Licensed through GNU and Creative Commons

As the cubist style developed, its forms became even flatter. Juan Gris's The Sunblind from 1914 splays the still life it represents across the canvas. Collage elements like newspaper reinforce pictorial flatness.



Juan Gris, The Sunblind, 1914. Gouache, collage, chalk, and charcoal on canvas. Tate Gallery, London. Image licensed under GNU Free Documentation License

It's not so difficult to understand the importance of this new idea of space when placed in the context of comparable advances in science surrounding the turn of the nineteenth century. The Wright Brothers took to the air with powered flight in 1903, the same year Marie Curie won the first of two Nobel prizes for her pioneering work in radiation. Sigmund Freud's new ideas on the inner spaces of the mind and its effect on behavior were published in 1902, and Albert Einstein's calculations on relativity, the idea that space and time are intertwined, first appeared in 1905. Each of these discoveries added to human understanding and realligned the way we look at ourselves and our world. Indeed, Picasso, speaking of his struggle to define cubism, said "Even Einstein did not know it either! The condition of discovery is outside ourselves; but the terrifying thing is that despite all this, we can only find what we know" (from Picasso on Art, A Selection of Views by Dore Ashton, (Souchere, 1960, page 15).

Three-dimensional space doesn't undergo this fundemental transformation. It remains a visual tug between positive and negative spaces. Sculptors influenced by cubism do, however, develop new forms to fill this space; abstract and non-objective works that chanllenge us to see them on their own terms. Constantin Brancusi, a Romanian sculptor living in Paris, became a leading artist to champion

the new forms of modern art. His sculpture **Bird in Space** is an elegant example of how abstraction and formal arrangement combine to symbolize the new movement. The photograph of Brancusi's studio below gives further evidence of sculpture's debt to cubism and the struggle "to go around the object, to give it plastic expression."

Edward Steichen, Brancusi's studio, 1920. Metropolitan Museum, New York. This photograph is in the public domain.

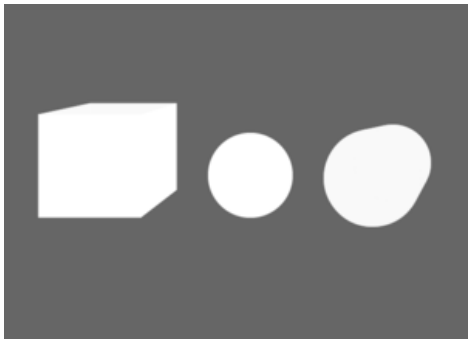
Value

Now that we've established line, shape, and spatial relationships, we can turn our attention to surface qualities and their importance in works of art. Value (or tone), color and texture are the elements used to do this.

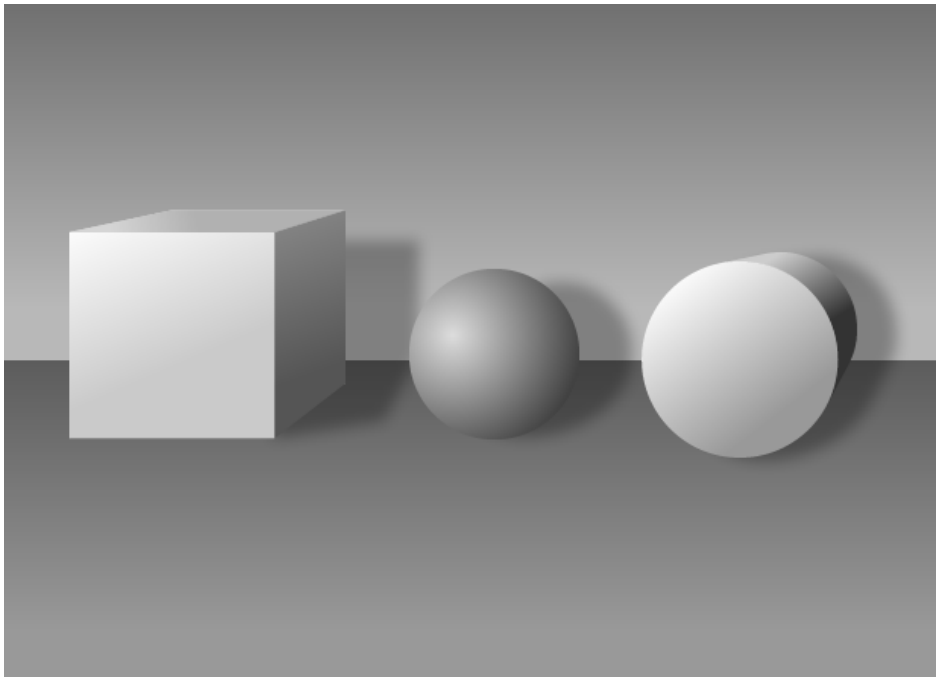
Value is the relative lightness or darkness of a shape in relation to another. The value scale, bounded on one end by pure white and on the other by black, and in between a series of progressively darker shades of grey, gives an artist the tools to make these transformations. The value scale below shows the standard variations in tones. Values near the lighter end of the spectrum are termed high-keyed, those on the darker end are low-keyed.

Value Scale, 11 July 2012, Creator: Oliver Harrison, CC BY

In two dimensions, the use of value gives a shape the illusion of mass and lends an entire composition a sense of light and shadow. The two examples below show the effect value has on changing a shape to a form.



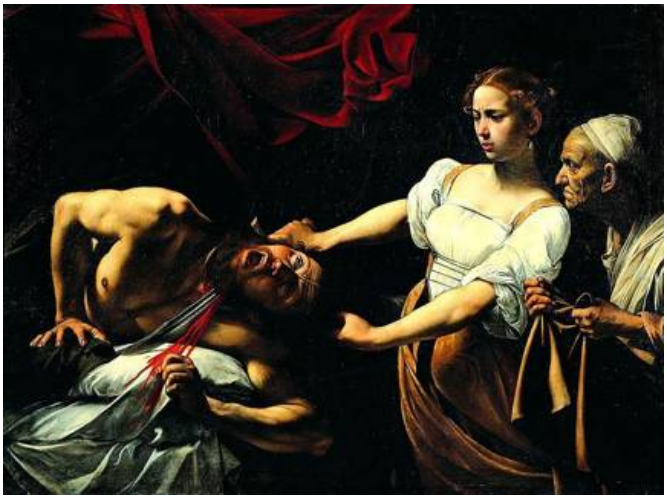
2D Form, 11 July 2012, Creator: Oliver Harrison, CC BY



3D Form, 11 July 2012, Creator: Oliver Harrison, CC BY

This same technique brings to life what begins as a simple line drawing of a young man's head in Michelangelo's **Head of a Youth and a Right Hand** from 1508. Shading is created with line (refer to our discussion of line earlier in this module) or tones created with a pencil. Artists vary the tones by the amount of resistance they use between the pencil and the paper they're drawing on. A drawing pencil's leads vary in hardness, each one giving a different tone than another. Washes of ink or color create values determined by the amount of water the medium is dissolved into.

The use of high contrast, placing lighter areas of value against much darker ones, creates a dramatic effect, while low contrast gives more subtle results. These differences in effect are evident in 'Guiditta and Oloferne' by the Italian painter Caravaggio, and Robert Adams' photograph **Untitled, Denver** from 1970-74. Caravaggio uses a high contrast palette to an already dramatic scene to increase the visual tension for the viewer, while Adams deliberately makes use of low contrast to underscore the drabness of the landscape surrounding the figure on the bicycle.



Caravaggio, Guiditta Decapitates Oloferne, 1598, oil on canvas. National Gallery of Italian Art, Rome. This work is in the public domain

Color

Color is the most complex artistic element because of the combinations and variations inherent in its use. Humans respond to color combinations differently, and artists study and use color in part to give desired direction to their work.

Color is fundamental to many forms of art. Its relevance, use and function in a given work depend on the medium of that work. While some concepts dealing with color are broadly applicable across media, others are not.

The full spectrum of colors is contained in white light. Humans perceive colors from the light reflected off objects. A red object, for example, looks red because it reflects the red part of the spectrum. It would be a different color under a different light. Color theory first appeared in the 17th century when English mathematician and scientist Sir Isaac Newton discovered that white light could be divided into a spectrum by passing it through a prism.

The study of color in art and design often starts with color theory. Color theory splits up colors into three categories: primary, secondary, and tertiary.

The basic tool used is a color wheel, developed by Isaac Newton in 1666. A more complex model known as the **color tree**, created by Albert Munsell, shows the spectrum made up of sets of tints and shades on connected planes.

There are a number of approaches to organizing colors into meaningful relationships. Most systems differ in structure only.

Traditional Model

Traditional color theory is a qualitative attempt to organize colors and their relationships. It is based on Newton's color wheel, and continues to be the most common system used by artists.

Blue Yellow Red Color Wheel. Released under the GNU Free Documentation License

Traditional color theory uses the same principles as subtractive color mixing (see below) but prefers different primary colors.

- The primary colors are red, blue, and yellow. You find them equidistant from each other on the color wheel. These are the "elemental" colors; not produced by mixing any other colors, and all other colors are derived from some combination of these three.
- The secondary colors are orange (mix of red and yellow), green (mix of blue and yellow), and violet (mix of blue and red).
- The tertiary colors are obtained by mixing one primary color and one secondary color. Depending on amount of color used, different hues can be obtained such as red-orange or yellow-green. Neutral colors (browns and grays) can be mixed using the three primary colors together.
- White and black lie outside of these categories. They are used to lighten or darken a color. A lighter color (made by adding white to it) is called a tint, while a darker color (made by adding black) is called a shade.

Color Mixing

A more quantifiable approach to color theory is to think about color as the result of light reflecting off a surface. Understood in this way, color can be represented as a ratio of amounts of primary color mixed together.

Additive color theory is used when different colored lights are being projected on top of each other. Projected media produce color by projecting light onto a reflective surface. Where subtractive mixing creates the impression of color by selectively absorbing part of the spectrum, additive mixing produces color by selective projection of part of the spectrum. Common applications of additive color theory are theater lighting and television screens. RGB color is based on additive color theory.

- The primary colors are red, blue, and green.
- The secondary colors are yellow (mix of red and green), cyan (mix of blue and green), and magenta (mix of blue and red).
- The tertiary colors are obtained by mixing the above colors at different intensities.

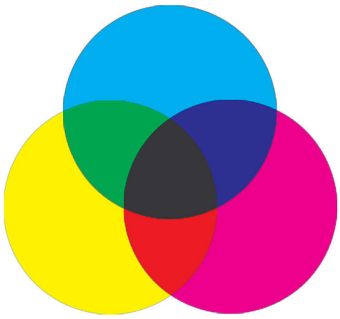
White is created by the confluence of the three primary colors, while black represents the absence of all color. The lightness or darkness of a color is determined by the intensity/density of its various parts. For instance: a middle-toned gray could be produced by projecting a red, a blue and a green light at the same point with 50% intensity.

Additive Color Representation. This image is in the public domain.

The primaries are red, green and blue. White is the confluence of all the primary colors; black is the absence of color.

Subtractive color theory ("process color") is used when a single light source is being reflected by different colors laid one on top of the other. Color is produced when parts of the external light source's spectrum are absorbed by the material and not reflected back to the viewer's eye. For example, a painter brushes blue paint onto a canvas. The chemical composition of the paint allows all of the colors in the spectrum to be absorbed except blue, which is reflected from the paint's surface. Subtractive color works as the reverse of additive color theory. Common applications of subtractive color theory are used in the visual arts, color printing and processing photographic positives and negatives. The primary colors are red, yellow, and blue.

- The secondary colors are orange, green and violet.
- The tertiary colors are created by mixing a primary with a secondary color.
- Black is mixed using the three primary colors, while white represents the absence of all colors. Note: because of impurities in subtractive color, a true black is impossible to create through the mixture of primaries. Because of this the result is closer to brown. Similar to additive color theory, lightness and darkness of a color is determined by its intensity and density.



Subtractive Color Mixing. Released under the GNU Free Documentation License

The primaries are blue, yellow and red.

Color Attributes

There are many attributes to color. Each one has an effect on how we perceive it.

- **Hue** refers to color itself, but also to the variations of a color.
- **Value** (as discussed previously)refers to the relative lightness or darkness of one color next to another. The value of a color can make a difference in how it is perceived. A color on a dark background will appear lighter, while that same color on a light background will appear darker.
- **Tone** refers to the gradation or subtle changes made to a color when it's mixed with a gray created by adding two complements (see Complementary Color below). You can see various color tones by looking at the color tree mentioned in the paragraph above.
- **Saturation** refers to the purity and intensity of a color. The primaries are the most intense and pure, but diminish as they are mixed to form other colors. The creation of tints and shades also diminish a color's saturation. Two colors work strongest together when they share the same intensity. This is called **equiluminance**.

Color Interactions

Beyond creating a mixing hierarchy, color theory also provides tools for understanding how colors work together.

Monochrome

The simplest color interaction is monochrome. This is the use of variations of a single hue. The advantage of using a monochromatic color scheme is that you get a high level of unity throughout the artwork because all the tones relate to one another. See this in Mark Tansey's **Derrida Queries de Man** from 1990.

Analogous Color

Analogous colors are similar to one another. As their name implies, analogous colors can be found next to one another on any 12-part color wheel:

Analogous Color, 11 July 2012, Creator: Oliver Harrison. CC BY

You can see the effect of analogous colors in Paul Cezanne's oil painting **Auvers Panoromic View**

Color Temperature

Colors are perceived to have temperatures associated with them. The color wheel is divided into warm and cool colors. Warm colors range from yellow to red, while cool colors range from yellow-green to violet. You can achieve complex results using just a few colors when you pair them in warm and cool sets.

Warm cool color, 11 July 2012, Creator: Oliver Harrison. CC BY

Complementary Colors

Complementary colors are found directly opposite one another on a color wheel. Here are some examples:

- purple and yellow
- green and red
- orange and blue

Complementary Color, 11 July 2012, Creator: Oliver Harrison. CC BY

Blue and orange are complements. When placed near each other, complements create a visual tension. This color scheme is desirable when a dramatic effect is needed using only two colors. The painting **Untitled** by Keith Haring is an example. You can click the painting to create a larger image.

A **split complementary** color scheme uses one color plus the two colors on each side of the first color's complement on the color wheel. Like the use of complements, a split complement creates visual tension but includes the variety of a third color.

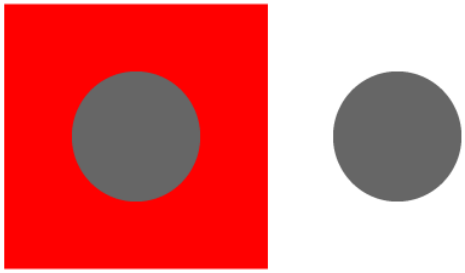
Split Complementary Color, 11 July 2012, Creator: Oliver Harrison. CC BY

Color Subtraction refers to a visual phenomenon where the appearance of one color will lessen its presence in a nearby color. For instance, orange (red + yellow) on a red background will appear more like yellow. Don't confuse color subtraction with the subtractive color system mentioned earlier in this module. Color subtraction uses specific hues within a color scheme for a certain visual effect.

Simultaneous Contrast

Neutrals on a colored background will appear tinted toward that color's complement, because the eye attempts to create a balance. (Grey on a red background will appear more greenish, for example.) In other words, the color will shift away from the surrounding color. Also, non-dominant colors will appear tinted towards the complement of the dominant color.

Color interaction affect values, as well. Colors appear darker on or near lighter colors, and lighter on or near darker colors. Complementary colors will look more intense on or near each other than they will on or near grays (refer back to the Keith Haring example above to see this effect).



Simultaneous Contrast, 11 July 2012, Creator: Oliver Harrison. CC BY

Reading: Artistic Principles

Art As Visual Input

Visual art manifests itself through media, ideas, themes and sheer creative imagination. Yet all of these rely on basic structural principles that, like the elements we've been studying, combine to give voice to artistic expression. Incorporating the principles into your artistic vocabulary not only allows you to objectively describe artworks you may not understand, but contributes in the search for their meaning.

The first way to think about a principle is that it is something that can be repeatedly and dependably done with elements to produce some sort of visual effect in a composition.

The principles are based on sensory responses to visual input: elements APPEAR to have visual weight, movement, etc. The principles help govern what might occur when particular elements are arranged in a particular way. Using a chemistry analogy, the principles are the ways the elements "stick together" to make a "chemical" (in our case, an image). Principles can be confusing. There are at least two very different but correct ways of thinking about principles. On the one hand, a principle can be used to describe an operational cause and effect such as "bright things come forward and dull things recede". On the other hand, a principle can describe a high quality standard to strive for such as "unity is better than chaos" or "variation beats boredom" in a work of art. So, the word "principle" can be used for very different purposes.

Another way to think about a principle is that it is a way to express a value judgment about a composition. Any list of these effects may not be comprehensive, but there are some that are more commonly used (unity, balance, etc). When we say a painting has unity we are making a value judgment. Too much unity without variety is boring and too much variation without unity is chaotic.

The principles of design help you to carefully plan and organize the elements of art so that you will hold interest and command attention. This is sometimes referred to as visual impact.

In any work of art there is a thought process for the arrangement and use of the elements of design. The artist who works with the principles of good composition will create a more interesting piece; it will be arranged to show a pleasing rhythm and movement. The center of interest will be strong and the viewer will not look away, instead, they will be drawn into the work. A good knowledge of composition is essential in producing good artwork. Some artists today like to bend or ignore these rules and by doing so are experimenting with different forms of expression. The following page explore important principles in composition.

Visual Balance

All works of art possess some form of visual balance – a sense of weighted clarity created in a composition. The artist arranges balance to set the dynamics of a composition. A really good example is in the **work** of Piet Mondrian, whose revolutionary paintings of the early twentieth century used non-objective balance instead of realistic subject matter to generate the visual power in his work. In the examples below you can see that where the white rectangle is placed makes a big difference in how the entire picture plane is activated.

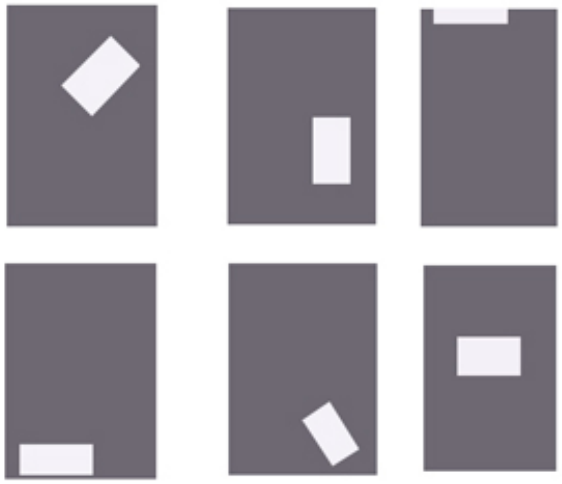


Image by Christopher Gildow. Used with permission.

The example on the top left is weighted toward the top, and the diagonal orientation of the white shape gives the whole area a sense of movement. The top middle example is weighted more toward the bottom, but still maintains a sense that the white shape is floating. On the top right, the white shape is nearly off the picture plane altogether, leaving most of the remaining area visually empty. This arrangement works if you want to convey a feeling of loftiness or simply direct the viewer's eyes to the top of the composition. The lower left example is perhaps the least dynamic: the white shape is resting at the bottom, mimicking the horizontal bottom edge of the ground. The overall sense here is restful, heavy and without any dynamic character. The bottom middle composition is weighted decidedly toward the bottom right corner, but again, the diagonal orientation of the white shape leaves some sense of movement. Lastly, the lower right example places the white shape directly in the middle on a horizontal axis. This is visually the most stable, but lacks any sense of movement. Refer to these six diagrams when you are determining the visual weight of specific artworks.

There are three basic forms of visual balance:

- Symmetrical
- Asymmetrical
- Radial

Examples of Visual Balance. Left: Symmetrical. Middle: Asymmetrical. Right: Radial. Image by Christopher Gildow. Used with permission.

Symmetrical balance is the most visually stable, and characterized by an exact—or nearly exact—compositional design on either (or both) sides of the horizontal or vertical axis of the picture plane. Symmetrical compositions are usually dominated by a central anchoring element. There are many examples of symmetry in the natural world that reflect an aesthetic dimension. The Moon Jellyfish fits this description; ghostly lit against a black background, but absolute symmetry in its design.

Moon Jellyfish, (detail). Digital image by Luc Viator, licensed by Creative Commons

But symmetry's inherent stability can sometimes preclude a static quality. View the Tibetan **scroll painting** to see the implied movement of the central figure Vajrakilaya. The visual busyness of the

shapes and patterns surrounding the figure are balanced by their compositional symmetry, and the wall of flame behind Vajrakilaya tilts to the right as the figure itself tilts to the left. Tibetan scroll paintings use the symmetry of the figure to symbolize their power and spiritual presence.

Spiritual paintings from other cultures employ this same balance for similar reasons. Sano di Pietro's 'Madonna of Humility', painted around 1440, is centrally positioned, holding the Christ child and forming a triangular design, her head the apex and her flowing gown making a broad base at the bottom of the picture. Their halos are visually reinforced with the heads of the angels and the arc of the frame.

Sano di Peitro, Madonna of Humility, c.1440, tempera and tooled gold and silver on panel. Brooklyn Museum, New York. Image is in the public domain

The use of symmetry is evident in three-dimensional art, too. A famous example is the Gateway Arch in St. Louis, Missouri (below). Commemorating the westward expansion of the United States, its stainless steel frame rises over 600 feet into the air before gently curving back to the ground. Another example is Richard Serra's Tilted Spheres (also below). The four massive slabs of steel show a concentric symmetry and take on an organic dimension as they curve around each other, appearing to almost hover above the ground.

Eero Saarinen, Gateway Arch, 1963-65, stainless steel, 630’ high. St. Louis, Missouri. Image Licensed through Creative Commons

Richard Serra, Tilted Spheres, 2002 – 04, Cor-ten steel, 14’ x 39’ x 22’. Pearson International Airport, Toronto, Canada. Image Licensed through Creative Commons

Asymmetry uses compositional elements that are offset from each other, creating a visually unstable balance. Asymmetrical visual balance is the most dynamic because it creates a more complex design construction. A graphic poster from the 1930s shows how offset positioning and strong contrasts can increase the visual effect of the entire composition.

Poster from the Library of Congress archives. Image is in the public domain

Claude Monet's Still Life with Apples and Grapes from 1880 (below) uses asymmetry in its design to enliven an otherwise mundane arrangement. First, he sets the whole composition on the diagonal, cutting off the lower left corner with a dark triangle. The arrangement of fruit appears haphazard, but Monet purposely sets most of it on the top half of the canvas to achieve a lighter visual weight. He balances the darker basket of fruit with the white of the tablecloth, even placing a few smaller apples at the lower right to complete the composition.

Monet and other **Impressionist** painters were influenced by Japanese woodcut prints, whose flat spatial areas and graphic color appealed to the artist's sense of design.

Claude Monet, Still Life with Apples and Grapes,

1880, oil on canvas. The Art Institute of Chicago. Licensed under Creative Commons

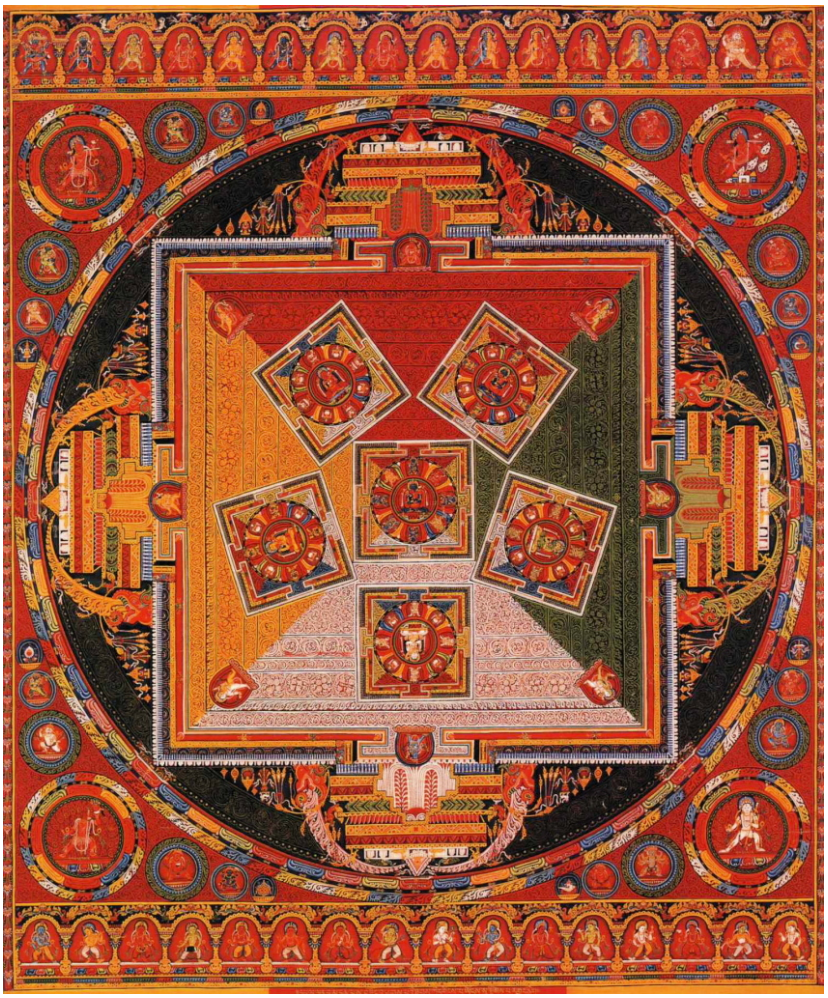
One of the best-known Japanese print artists is **Ando Hiroshige**. You can see the design strength of asymmetry in his woodcut Shinagawa on the Tokaido (below), one of a series of works that explores the landscape around the Takaido road. You can view many of his works through the hyperlink above.

Hiroshige, Shinagawa on the Tokaido, ukiyo-e print, after 1832. Licensed under Creative Commons

In Henry Moore's Reclining Figure the organic form of the abstracted figure, strong lighting and precarious balance obtained through asymmetry make the sculpture a powerful example in three-dimensions.

Henry Moore, Reclining Figure, 1951. Painted bronze. Fitzwilliam Museum, Cambridge. Photo by Andrew Dunn and licensed under Creative Commons

Radial balance suggests movement from the center of a composition towards the outer edge—or vise versa. Many times radial balance is another form of symmetry, offering stability and a point of focus at the center of the composition. Buddhist **mandala** paintings offer this kind of balance almost exclusively. Similar to the scroll painting we viewed previously, the image radiates outward from a central spirit figure. In the example below there are six of these figures forming a star shape in the middle. Here we have absolute symmetry in the composition, yet a feeling of movement is generated by the concentric circles within a rectangular format.



Tibetan Mandala of the Six Chakravartins, c. 1429-46. Central Tibet (Ngor Monestary). Image is in the public domain

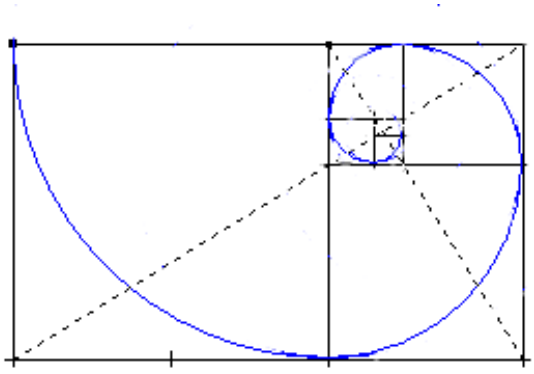
Raphael's painting of Galatea, a sea nymph in Greek mythology, incorporates a double set of radial designs into one composition. The first is the swirl of figures at the bottom of the painting, the second being the four cherubs circulating at the top. The entire work is a current of figures, limbs and implied motion. Notice too the stabilizing classic triangle formed with Galatea's head at the apex and the other

figures' positions inclined towards her. The cherub outstretched horizontally along the bottom of the composition completes the second circle.

Raphael, Galatea, fresco, 1512. Villa Farnesina, Rome. Work is in the public domain

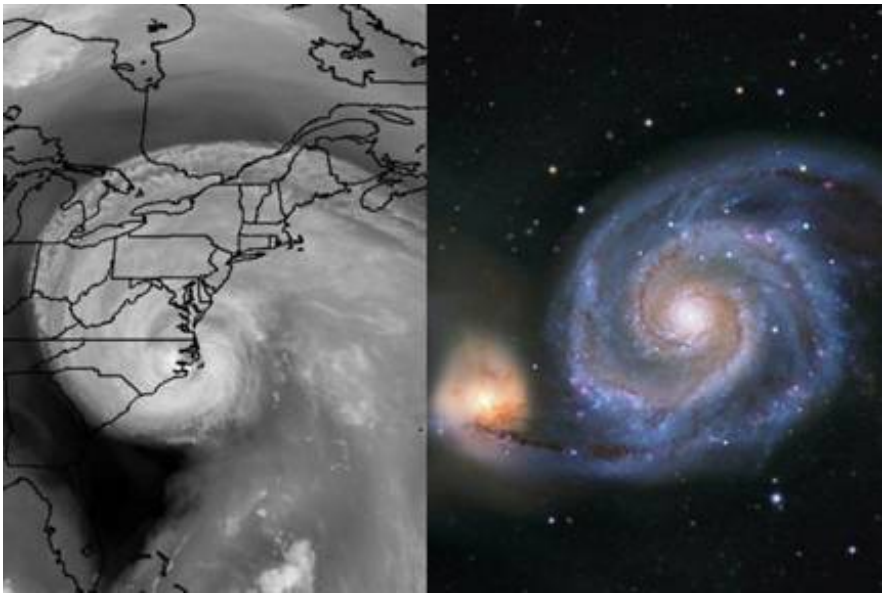
Within this discussion of visual balance, there is a relationship between the natural generation of organic systems and their ultimate form. This relationship is mathematical as well as aesthetic, and is expressed as the Golden Ratio:

Here is an example of the golden ratio in the form of a rectangle and the enclosed spiral generated by the ratios:



The golden ratio. Image from Wikipedia Commons and licensed through Creative Commons

The natural world expresses radial balance, manifest through the golden ratio, in many of its structures, from galaxies to tree rings and waves generated from dropping a stone on the water's surface. You can see this organic radial structure in some natural systems by comparing the satellite image of hurricane Isabel and a telescopic image of spiral galaxy M51 below.



Images by the National Weather service and NASA. Images are in the public domain.

A snail shell, unbeknownst to its inhabitant, is formed by this same universal ratio, and, in this case, takes on the green tint of its surroundings.

Image by Christopher Gildow. Used with permission.

Environmental artist Robert Smithson created Spiral Jetty, an earthwork of rock and soil, in 1970. The jetty extends nearly 1500 feet into the Great Salt Lake in Utah as a symbol of the interconnectedness of our selves to the rest of the natural world.

Robert Smithson, Spiral Jetty, 1970. Image by Soren Harward, CC BY-SA

Repetition

Repetition is the use of two or more like elements or forms within a composition. The systematic arrangement of a repeated shapes or forms creates **pattern.**

Patterns create **rhythm**, the lyric or syncopated visual effect that helps carry the viewer, and the artist's idea, throughout the work. A simple but stunning visual pattern, created in **this photograph** of an orchard by Jim Wilson for the New York Times, combines color, shape and direction into a rhythmic flow from left to right. Setting the composition on a diagonal increases the feeling of movement and drama.

The traditional art of Australian aboriginal culture uses repetition and pattern almost exclusively both as decoration and to give symbolic meaning to images. The coolamon, or carrying vessel pictured below, is made of tree bark and painted with stylized patterns of colored dots indicating paths, landscapes or animals. You can see how fairly simple patterns create rhythmic undulations across the surface of the work. The design on this particular piece indicates it was probably made for ceremonial use. We'll explore aboriginal works in more depth in the 'Other Worlds' module.

Australian aboriginal softwood coolamon with acrylic paint design. Licensed under Creative Commons

Rhythmic cadences take complex visual form when subordinated by others. Elements of line and shape coalesce into a formal matrix that supports the leaping salmon in Alfredo Arreguin's 'Malila Diptych'. Abstract arches and spirals of water reverberate in the scales, eyes and gills of the fish. Arreguin creates two rhythmic beats here, that of the water flowing downstream to the left and the fish gracefully jumping against it on their way upstream.

Alfredo Arreguin, Malila Diptych, 2003 (detail). Washington State Arts Commission. Digital Image by Christopher Gildow. Licensed under Creative Commons.

The textile medium is well suited to incorporate pattern into art. The **warp** and **weft** of the yarns create natural patterns that are manipulated through position, color and size by the weaver. The Tlingit culture of coastal British Columbia produce spectacular **ceremonial** blankets distinguished by graphic

patterns and rhythms in stylized animal forms separated by a hierarchy of geometric shapes. The symmetry and high contrast of the design is stunning in its effect.

Scale and Proportion

Scale and proportion show the relative size of one form in relation to another. Scalar relationships are often used to create illusions of depth on a two-dimensional surface, the larger form being in front of the smaller one. The scale of an object can provide a focal point or emphasis in an image. In Winslow Homer's watercolor A Good Shot, Adirondacks the deer is centered in the foreground and highlighted to assure its place of importance in the composition. In comparison, there is a small puff of white smoke from a rifle in the left center background, the only indicator of the hunter's position. Click the image for a larger view.

Scale and proportion are incremental in nature. Works of art don't always rely on big differences in scale to make a strong visual impact. A good example of this is Michelangelo's sculptural masterpiece Pieta from 1499 (below). Here Mary cradles her dead son, the two figures forming a stable triangular composition. Michelangelo sculpts Mary to a slightly larger scale than the dead Christ to give the central figure more significance, both visually and psychologically.

Michelangelo's Pieta, 1499, marble. St. Peter's Basilica, Rome. Licensed under GNU Free Documentation License and Creative Commons

When scale and proportion are greatly increased the results can be impressive, giving a work commanding space or fantastic implications. Rene Magritte's painting Personal Values constructs a room with objects whose proportions are so out of whack that it becomes an ironic play on how we view everyday items in our lives.

American sculptor Claes Oldenburg and his wife Coosje van Bruggen create works of common objects at enormous scales. Their Stake Hitch reaches a total height of more than 53 feet and links two floors of the Dallas Museum of Art. As big as it is, the work retains a comic and playful character, in part because of its gigantic size.

Emphasis

Emphasis—the area of primary visual importance—can be attained in a number of ways. We've just seen how it can be a function of differences in scale. Emphasis can also be obtained by isolating an area or specific subject matter through its location or color, value and texture. Main emphasis in a composition is usually supported by areas of lesser importance, a hierarchy within an artwork that's activated and sustained at different levels.

Like other artistic principles, emphasis can be expanded to include the main idea contained in a work of art. Let's look at the following work to explore this.

We can clearly determine the figure in the white shirt as the main emphasis in Francisco de Goya's painting The Third of May, 1808 below. Even though his location is left of center, a candle lantern in front of him acts as a spotlight, and his dramatic stance reinforces his relative isolation from the rest of the crowd. Moreover, the soldiers with their aimed rifles create an implied line between them selves and the figure. There is a rhythm created by all the figures' heads—roughly all at the same level throughout the painting—that is continued in the soldiers' legs and scabbards to the lower right. Goya counters the horizontal emphasis by including the distant church and its vertical towers in the background.

In terms of the idea, Goya's narrative painting gives witness to the summary execution of Spanish resistance fighters by Napoleon's armies on the night of May 3, 1808. He poses the figure in the white shirt to imply a crucifixion as he faces his own death, and his compatriots surrounding him either clutch their faces in disbelief or stand stoically with him, looking their executioners in the eyes. While the carnage takes place in front of us, the church stands dark and silent in the distance. The genius of Goya is his ability to direct the narrative content by the emphasis he places in his composition.

Francisco de Goya y Lucientes, The Third of May, 1808, 1814. Oil on canvas. The Prado Museum, Madrid. This image is in the public domain

A second example showing emphasis is seen in Landscape with Pheasants, a silk tapestry from nineteenth-century China. Here the main focus is obtained in a couple of different ways. First, the pair of birds are woven in colored silk, setting them apart visually from the gray landscape they inhabit. Secondly, their placement at the top of the outcrop of land allows them to stand out against the light background, their tail feathers mimicked by the nearby leaves. The convoluted treatment of the rocky outcrop keeps it in competition with the pheasants as a focal point, but in the end the pair of birds' color wins out.

A final example on emphasis, taken from The Art of Burkina Faso by Christopher D. Roy, University of Iowa, covers both design features and the idea behind the art. Many world cultures include artworks in ceremony and ritual. African Bwa Masks are large, graphically painted in black and white and usually attached to fiber costumes that cover the head. They depict mythic characters and animals or are abstract and have a stylized face with a tall, rectangular wooden plank attached to the top.* In any manifestation, the mask and the dance for which they are worn are inseparable. They become part of a community outpouring of **cultural expression** and emotion.

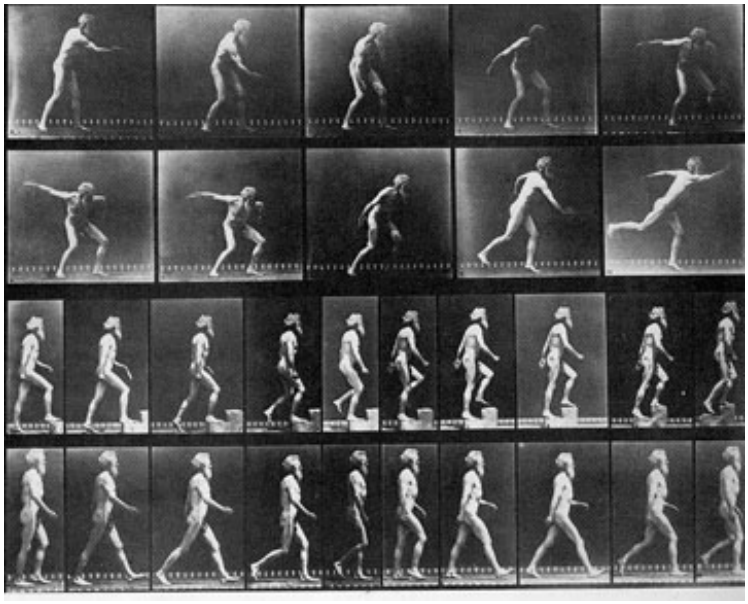
Time and Motion

One of the problems artists face in creating static (singular, fixed images) is how to imbue them with a sense of **time and motion**. Some traditional solutions to this problem employ the use of spatial

relationships, especially perspective and atmospheric perspective. Scale and proportion can also be employed to show the passage of time or the illusion of depth and movement. For example, as something recedes into the background, it becomes smaller in scale and lighter in value. Also, the same figure (or other form) repeated in different places within the same image gives the effect of movement and the passage of time.

An early example of this is in the carved sculpture of **Kuya Shonin**. The Buddhist monk leans forward, his cloak seeming to move with the breeze of his steps. The figure is remarkably realistic in style, his head lifted slightly and his mouth open. Six small figures emerge from his mouth, visual symbols of the chant he utters.

Visual experiments in movement were first produced in the middle of the 19th century. Photographer Eadweard Muybridge snapped black and white sequences of figures and animals walking, running and jumping, then placing them side-by-side to examine the mechanics and rhythms created by each action.



Eadweard Muybridge, sequences of himself throwing a disc, using a step and walking. Licensed through Creative Commons

In the modern era, the rise of cubism (please refer back to our study of 'space' in module 3) and subsequent related styles in modern painting and sculpture had a major effect on how static works of art depict time and movement. These new developments in form came about, in part, through the cubist's initial exploration of how to depict an object and the space around it by representing it from multiple viewpoints, incorporating all of them into a single image.

Marcel Duchamp's painting **Nude Descending a Staircase** from 1912 formally concentrates Muybridge's idea into a single image. The figure is abstract, a result of Duchamp's influence by cubism, but gives the viewer a definite feeling of movement from left to right. This work was exhibited at **The Armory Show** in New York City in 1913. The show was the first to exhibit modern art from the United States and Europe at an American venue on such a large scale. Controversial and fantastic, the Armory show became a symbol for the emerging modern art movement. Duchamp's painting is representative of the new ideas brought forth in the exhibition.

In three dimensions the effect of movement is achieved by imbuing the subject matter with a dynamic pose or gesture (recall that the use of diagonals in a composition helps create a sense of movement). Gian Lorenzo Bernini's sculpture of **David** from 1623 is a study of coiled visual tension and movement. The artist shows us the figure of David with furrowed brow, even biting his lip in concentration as he eyes Goliath and prepares to release the rock from his sling.

The temporal arts of film, video and digital projection by their definition show movement and the passage of time. In all of these mediums we watch as a narrative unfolds before our eyes. Film is essentially thousands of static images divided onto one long roll of film that is passed through a lens at a certain speed. From this apparatus comes the term movies.

Video uses magnetic tape to achieve the same effect, and digital media streams millions of electronically pixilated images across the screen. An example is seen in the work of Swedish Artist Pipilotti Rist. Her large-scale digital work **Pour Your Body Out** is fluid, colorful and absolutely absorbing as it unfolds across the walls.

Unity and Variety

Ultimately, a work of art is the strongest when it expresses an overall **unity** in composition and form, a visual sense that all the parts fit together; that the whole is greater than its parts. This same sense of unity is projected to encompass the idea and meaning of the work too. This visual and conceptual unity is sublimated by the **variety** of elements and principles used to create it. We can think of this in terms of a musical orchestra and its conductor: directing many different instruments, sounds and feelings into a single comprehendible symphony of sound. This is where the objective functions of line, color, pattern, scale and all the other artistic elements and principles yield to a more subjective view of the entire work, and from that an appreciation of the aesthetics and meaning it resonates.

We can view Eva Isaksen's work Orange Light below to see how unity and variety work together.

Eva Isaksen, Orange Light, 2010. Print and collage on canvas. 40” x 60.” Permission of the artist

Isaksen makes use of nearly every element and principle including shallow space, a range of values, colors and textures, asymmetrical balance and different areas of emphasis. The unity of her composition stays strong by keeping the various parts in check against each other and the space they inhabit. In the end the viewer is caught up in a mysterious world of organic forms that float across the surface like seeds being caught by a summer breeze.