



FOREWORD BY
ROSS KING

AUTHOR OF *MICHELANGELO*
AND THE POPE'S CEILING

NEW EDITION

THE DEFINITIVE
VISUAL HISTORY

art

Contents



Looking at art 12

- Subject and composition **14**
- Perspective and viewpoint **20**
- Light and shade **22**
- Media and techniques **24**
- Color **30**
- Brushstrokes and texture **34**



Prehistory to 1400 CE 36

- Prehistoric art **38**
- Ancient Near East **42**
- Ancient Egypt **46**
- Civilizations of the East **50**
- Ancient Greece **52**
- Themes: Nudes 56**
- Etruscans and Ancient Rome **59**
- Outside the empires **62**
- Early Christian and Byzantine **64**
- Carolingian **66**
- Ottonian **67**
- Viking art **68**
- Anglo-Saxon and Celtic art **69**
- Early Islamic art **72**
- South Asia **74**

Southeast Asia **76**
East Asia **78**
Central and South America **80**
Romanesque and Gothic art **82**
Early Italian art **84**
International Gothic art **88**

15th and 16th centuries 90

Italian Renaissance **92**
Themes: Myth and legend 128
Northern Renaissance **138**
Themes: Landscape 152
Mannerism **175**
China: Ming dynasty **185**
Japanese art **188**
Central and South America **190**

17th and 18th centuries 192

Baroque **194**
Themes: Still Life 208
Rococo **242**
Themes: Animals 260
Neoclassicism **266**
English watercolorists **276**
Colonial America **278**
China: Qing dynasty **281**
Japanese art **285**
Islamic art **288**
Hindu art **292**



19th century 294

Romanticism **296**

Themes: Love 314

Realism **324**

The Pre-Raphaelites **332**

Victorian art **334**

French academic art **336**

Japanese art **338**

Impressionism **340**

Neo- and Postimpressionism **360**

Themes: Children 370

The Nabis **380**

Symbolism and Art Nouveau **382**

Scandinavian art **388**

End of the century **391**

Sculpture **394**

African art **396**

Oceania **398**

Early 20th century 400

Fauvism **402**

German Expressionism **408**

Prewar Vienna **412**

Cubism **416**

Futurism, Orphism, and
Rayonism **428**

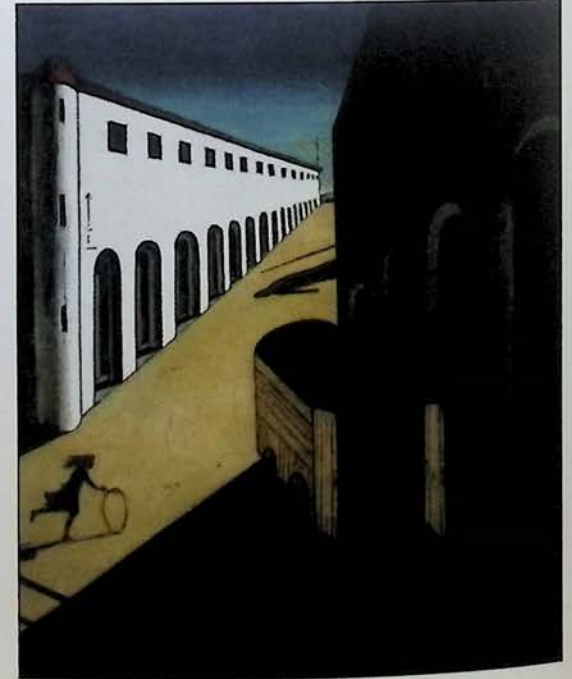
Birth of abstract art **434**

Themes: Work 442

Early British Modernism **446**

Early US Modernism **452**

Naïve painting **454**



1945 onward 500

Abstract Expressionism **502**

Themes: War 508

Postwar Europe **514**

Abstract painting and sculpture **521**

Minimal art **527**

Pop art **531**

Themes: Portraits 544

Op art and Kinetic art **546**

Assemblage, Junk, and

Land art **549**

Conceptual art **555**

Figurative painting **561**

Superrealism **568**

Feminist art **570**

Neo-Expressionism and

Graffiti art **572**

New Media **576**

Contemporary sculpture **581**

Australian Aboriginal art **584**

Europe today **586**

Africa today **589**

Asia today **591**

North America today **593**

Glossary **596**

Index **599**

Acknowledgments **610**

École de Paris **458**

Constructivism **462**

Dada **466**

Surrealism **470**

Neue Sachlichkeit

(New Objectivity) **480**

Bauhaus **482**

Avant-garde in Britain and

the US **486**

Realism and

Figurative painting **490**

Mexican art **496**



When you look at a work of art, you may quickly decide whether you like it or not. But have you ever wondered why some pictures appeal to you more than others? There is no definitive answer to this question, but if you can start to understand how and why the artist created the piece, you will appreciate and enjoy it more.

Looking

Art is rarely created in a moment of inspiration.

To understand the artist's aims and intentions, there are a myriad of factors to consider—the size of the painting or sculpture, its subject matter or story, and how the different elements of the piece relate to each other. What is the artist's viewpoint and how has he or she used color, perspective, light, and shade—and why? What materials and surfaces have been used, and how do these contribute to the qualities of the finished work?

Looking at art explains how to “read” a work of art more thoroughly, and understand what the artist was trying to achieve. The section also introduces the language of art, so that you gain the vocabulary to analyze what you see. As you begin to develop an informed sense of why you like some works of art more than others, the experience of looking at art will become more meaningful and enjoyable.

at art



Subject and composition

When you look at a work of art, the first question to ask is, what is it about? Once you have established the content, you can consider how the artist has arranged the elements of the piece—the composition. Whether the image is of people, landscape, still life, or abstract, it has to work as an integrated whole, in which the other pictorial qualities such as color, light, and shade also play their part.

Portraits

Knowing that faces always attract attention, the artist has to think how best to present a sitter. Composing a portrait is more than a question of how true a likeness to attempt. Size, scale, shape, and viewpoint are important for all subjects and, for a portrait, the pose and props depend on what the artist and the sitter want to convey. If the sitter has commissioned the portrait, their opinion counts, but a paid model has no say in the composition.

Format

The typical shape for a portrait is the so-called “portrait format,” a rectangle that is taller than it is wide. A head-and-shoulders portrait fits neatly into this format, without leaving empty space at the sides or chopping off the top of the sitter’s head. Oval shapes are less common but also suit human proportions. Artists do not have to use the portrait format, as they may want to include a broader setting or some space.



◀ ▶ **Classic shape** Here the portrait format has been used to enclose the sitter within a plain background that provides breathing space. *Portrait of a Boy, Rosalba Carriera, 1726*



Size

How big or small a portrait is depends on its purpose as well as practicalities. In general, the larger the image, the more expensive the materials are and the longer it takes the artist. Huge portraits create an impact by their sheer size alone, and suggest that the subject is a god, of noble birth, prominent in society, or wealthy. Small portraits tend to be personal and intimate.



◀ **Miniature** Measuring a mere 5 1/4 x 2 1/2 in, this portrait of an Elizabethan nobleman may have been intended as a love token. *Young Man among Roses, Nicholas Hilliard, c1587*

▶ **Giant-sized** Averaging 36ft high, about six times life size, the massive volcanic stone statues on Easter Island, Polynesia, may be memorials to dead chiefs. c1000–1600



Length



With a portrait, the artist has to decide how much of the sitter to include. A head, shoulders, and upper chest (1), often called a bust in sculpture, is the most common format. A half length (2) is common for seated portraits. A three-quarter length portrait (3) requires some skill to make it look as if it is meant to stop at the subject’s knees. Full-length “swagger” portraits proclaim a person’s grandeur and superiority.

◀ ▲ **Full-length glamour** Sargent both scandalized and delighted high society in London and Paris with his flattering, elongated swagger portraits. This one is life size. *Portrait of the Countess of Clary Aldringen, John Singer Sargent, 1896*

View



Full-face portraits were originally reserved for God in Christian societies. The ancient Egyptians, however, depicted several viewpoints at once, such as a full-face eye within a profile, something not attempted in Western art until Picasso. The three-quarter view (1) is more common, providing a good idea of what the sitter looks like, as is the profile or side view (2), which was much used in early portraiture.

◀ ▶ **Looking at you** Full-face portraits can appear confrontational, but in this picture the sitter’s expression is warm and engaging rather than aggressive. *Madame Antonia de Vaucay, Jean-Auguste-Dominique Ingres, 1807*



Scale

Whether the sitter fills the canvas, looming large at you, or is just one of several elements competing for attention within the frame, scale is an important consideration. Psychological portraits tend to go close up on the human form and features. But moving farther out and including a setting and props gives the artist an opportunity to suggest more about the sitter’s character, interests, and situation in life.



◀ ▼ **Bigger picture** Here the artist could have focused on the sitter’s face, but chose to include her plain tea-table and cat, too. *Quaker Girl, Grace Cossington Smith, 1915*



Cropping

Sometimes what is left out of a painting says more about the subject than what is left in, intimating life beyond the confines of the canvas. Cropping—deliberately truncating a figure—can make you look afresh at the everyday and can suggest that what we see is not always what it seems. It may also imply that the subject was moving too fast to be captured within the frame or was not posing at all, as in a candid snapshot.



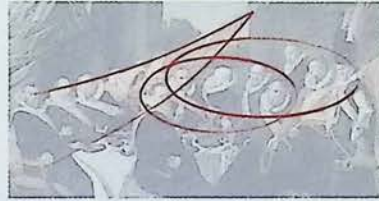
◀ ▲ **Less is more** Bonnard, just visible top left, painted his wife in the bath many times. Cropping both figures makes the image disturbingly voyeuristic. *Nude in the Bath, Pierre Bonnard, 1925*

The multiple portrait

Depicting more than one person presents practical challenges for the artist, who may not be able to persuade all the sitters to pose at the same time. Even if they pose separately, they must look like part of an integrated composition or the completed portrait will look artificial and stilted. The space between the sitters plays a key part in the composition, as does the background, which both encompasses and links the sitters.

Relationships

In multiple portraits the sitters are often engaged in a communal activity, such as feasting, which helps to relate them to each other. If the portrait is of just two or three people, the artist can suggest their relationship by their poses as well as through the composition.



◀ **Looking out** The banner leads your eye into the painting, and the circular arrangement takes you to each face in turn. The men are all looking in different directions, helping you to understand where they are in the composition. *A Banquet of the Officers of the St. George Militia Company, Frans Hals, 1616*



▶ **Eye contact** The trust between this pair is emphasized by their gaze of mutual affection. *An Old Man and a Boy, Domenico Ghirlandaio, 1480s*



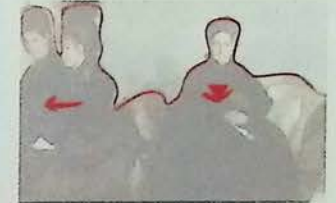
◀ **Intimate group** In this study the positions of the hands and arms keep you looking from parents to baby. *Family Portrait, Anthony van Dyck, 1618–21*



Space and form

To suggest isolation, an artist may contrast the solid, positive forms of people with the empty spaces between them, which is often referred to as negative space. These gaps between figures or objects strengthen the composition and can make the characters seem more three dimensional and therefore more convincing.

▶ **Staggered depth** The spaces between the solemn children, emphasized by the dark background, make them poignantly separate. *The Daughters of Edward Darley Boit, John Singer Sargent, 1882*



◀ **Family split** The sharp division between space and form signals a rift between the sitters. The contrast between the duchess's full-frontal pose and the daughters half out of the picture accentuates the split. *The Duchess de Montejasi and her Daughters Elena and Camilla, Edgar Degas, 1876*

Nudes

The art historian Kenneth Clark pointed out that while being naked was embarrassing, nudity was art. In Christian iconography, nakedness is linked with Adam and Eve's fall from grace. From the Renaissance, however, studying the male nude became essential for anatomical accuracy and classical myth made it more respectable to paint female nudes, who were idealized and made more beautiful and less individual than in real life.

Traditional

"Before dressing a nude we first draw him nude, then we enfold him in draperies," wrote the Renaissance art theorist Leon Battista Alberti. The male nude, exemplified by Michelangelo's works, was active. Artists and patrons were nearly always men, and spying on nude women bathing or asleep became an artistic genre. When awake, nude women tended to recline before an imagined male onlooker in front of the picture.

▶ **Active man** The tradition of nude sculptures of men in upright active poses goes back to classical antiquity. *Bronze Soldier, 5th century BCE*



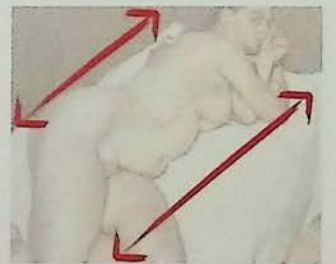
▼ **Picture format** A wide format is best suited to portraits of a reclining nude as it allows for the length of her body. Titian set the standard for the genre. *Danae Receiving the Shower of Gold, Titian, 1554*



Modern

While traditional female nudes were meant to be erotic, today's artists aim for psychological realism or to shock. They tend to accentuate the naked truth rather than idealizing the image of women for male delectation.

▼ **On a diagonal** The model sprawls diagonally across the canvas, cropped at the head and knees to fit the nearly square format. *Naked Woman on a Sofa, Lucian Freud, 1985*



Stories and action

Most art has a purpose. Looking at it is more than an aesthetic pleasure—a work of art has a message. In societies where few people are literate, art often tells a religious story. In Western art, *istoria* paintings that retell stories from history or the Bible were considered the most important form of story painting, followed by classical myths. Genre scenes of everyday life were thought by the art academies to be inferior to both.

History

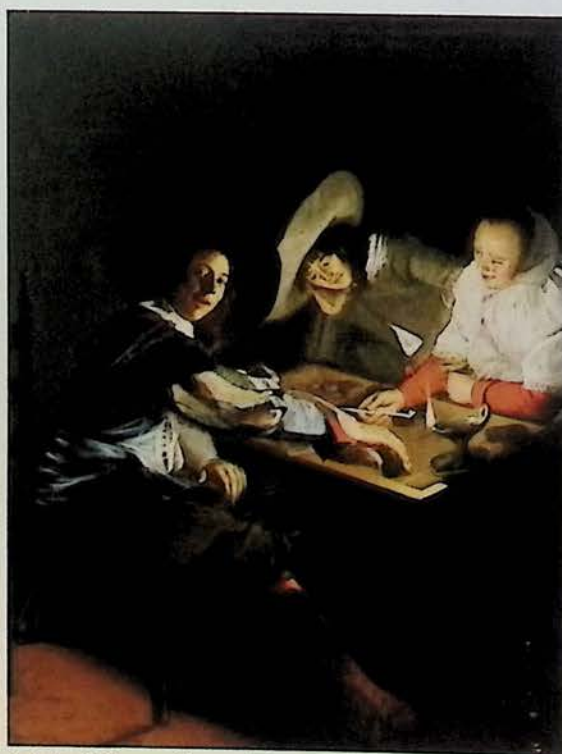


▲▲ **Formal and classical** David specialized in history paintings that likened the ancient Roman Republic to the newly formed French Republic. *Lictors Bearing to Brutus the Bodies of his Sons*, Jacques-Louis David, 1789

History paintings ennobled the past to create morally uplifting tales that were relevant to contemporary viewers. They are usually on a grand scale (1). David's painting measures a huge 127¼x167in. It has classical architecture and motifs (2), dramatic gestures of bravery (3), and ennobled features (4) that emphasize the serious nature of the work.

Genre

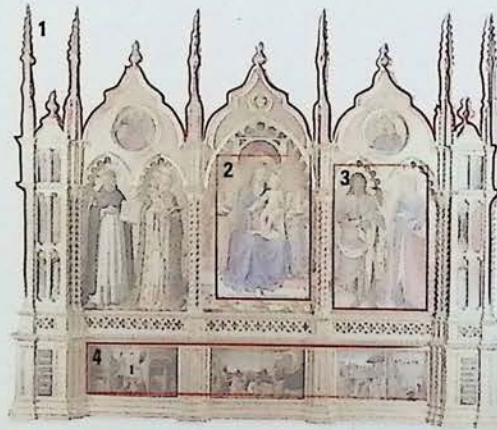
In contrast to huge history and religious paintings, genre paintings (scenes of everyday life) are small (1), partly because their subject matter is relatively unimportant and partly because they were made to hang in modest houses rather than churches or palaces. The characters are peasants and the bourgeoisie (2), enjoying pastimes (3) such as drinking, flirting, or gambling. Genre art often has a moral message.



▼▲ **Candlelit scene** Genre paintings often showed domestic interiors and included objects with symbolic meanings. The Netherlands was the 17th-century home of the art form. *A Game of Tric-Trac*, Judith Leyster, c1630

Religion

Art and religion have long been linked. Paintings were often commissioned for churches, but may no longer be in their original setting. Church altarpieces were often made in panels and sometimes shaped like a cathedral (1). Key figures of Christianity are the Madonna and Christ child (2). Saints (3) died for their faith, and usually have an object, or attribute, related to their martyrdom, which identifies them. Altarpieces often have a predella at the bottom (4), depicting a series of religious scenes.



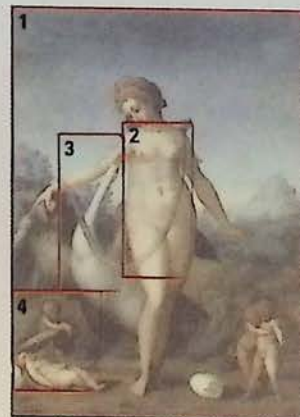
◀▲ **Christian altarpiece** Typical of the early Renaissance, Mary and Jesus are in the center of this altarpiece, with two saints on either side. *Madonna and Child Enthroned with Angels and Saints*, Fra Angelico, 1437

▶▲ **African fetish** Traditional African sculpture was made for religious ritual. This piece was used to mediate between the living and the dead. *Kongo container of spirits from the land of the dead*, late 19th century



Myth

Paintings based on classical myths are often large (1) as they were made for palaces. The main source was Ovid's *Metamorphoses*. The book is about changing form and usually involves a god turning into something else for the purpose of seduction. Nude females (2) abound, as do gods disguised as animals (3), and small Cupids (love figures) (4).



◀▲ **Amorous conquest** In this Italian Mannerist painting Zeus, the leader of the Ancient Greek gods, has cunningly disguised himself as a swan in order to seduce a nymph. *Leda and the Swan*, Jacopo Pontormo, c1512–13

Composing a narrative

When a painting tells a story, the artist uses composition to give the work a natural flow that helps the spectator to follow the action. The composition can therefore help you understand what is going on. In a well-made composition the spectator's eye is led to each of the main components of the story in turn by various visual means, such as shapes, linking devices, contrasts in scale, and the use of color.

Balance

All the different components of a picture have to balance each other so that the image works as an integrated whole. There are different ways to go about it, depending on the artist's aim. Some artists want to convey harmony and serenity, whereas others opt for contrast and dynamism or want to create a feeling of jagged discord.



◀ **Harmony** Christ is firmly established as the central figure of this painting because the composition is based upon the most stable of shapes: a triangle with a wide base narrowing to a point at the top of the picture. This creates a feeling of serenity. *The Resurrection, Piero della Francesca, c1463*

Rhythm

A painting or sculpture should have rhythm like a piece of music. Shapes can be repeated or set in opposition to each other. Visual links and a sense of rhythm are particularly important in a picture where there is a lot going on, or it can look like a jumble of unrelated elements that rapidly lose your attention. The spaces between the shapes are just as important as the shapes themselves and play a vital role in the composition, providing places for moving elements to go. As with all aspects of composition, a unified color scheme and finish, the interplay of light and shade, and the use of perspective all help to weave the action together.



◀ **Visual flow** In this scene Boucher used a billowing swirl of cloth to create a figure-eight design that links the sky and figures and keeps you looking from one to the other. The cloth also echoes the shape of the clouds at the top right of the picture. Fluttering Cupids lead your eye toward Venus, as does the wave of figures undulating from left to right. *The Triumph of Venus, François Boucher, 1740*



▼ **Changes in scale** The dramatic contrast between the size of the figures in the foreground, who are so close you can almost hear their conversation, with the scale of the bustling activity on the river leads your eye from the women to the scene behind them. The posts in the foreground also direct your gaze toward the river. *Winter Scene, Yamamoto Shoun, c1900*



◀ **Diagonals** A walk along one of Oslo's main streets has become a nightmare vision in this painting, as the pedestrians fan out and appear to come right out of the painting toward you. The curves of their cadaverous faces contrast with the strong diagonals of the composition. The solitary figure heading in the opposite direction increases the sense of nightmare and alienation. *Evening on Karl Johan, Edvard Munch, 1892*

Following the plot

Most stories in art taken from history, religion, or myth were known to their contemporary audience but may be unfamiliar now. To help viewers, artists provided visual clues, such as dramatic gestures, or objects, such as attributes, weapons, or crowns, to identify the key characters. The style of dress provides another clue: classical drapery indicates a history or mythological theme, but nudity is rarely a feature of historical tales.



◀ **Scene of virtue** This painting depicts a popular 17th-century theme, in which Scipio, a Roman general, returns a captive woman to her fiancé. Poussin divided the figures into groups. Scipio can be identified by his throne and crown (1), and his magnanimous gesture toward the woman in blue is answered by her fiancé's grateful acceptance (2). The soldiers on the right (3) remind you that this is war. *The Continnence of Scipio, Nicolas Poussin, 1640*

Landscape

In Oriental, notably Chinese, art, landscape painting has a long history dating back 1,000 years and more. Western landscape painting has its roots in the Renaissance, when religious pictures were first given realistic, rather than gold, backgrounds. Over time the figures became smaller, while the landscape expanded and became a theme in its own right. At about the same time, the idea of what a picture could communicate expanded to include atmosphere and poetry. Landscape lent itself to such treatment.

Format

While a tall rectangle is best suited to portraits, a wide rectangle, known as the "landscape" format, is generally better suited to landscapes. Like using a wide-angled lens in photography, it provides scope for breadth of vision, without too much sky. Artists do not, of course, have to use this format and may choose a portrait format for a landscape—to fit in tall trees perhaps, to emphasize the height of towering mountains, or for a cloud study. To make a really wide painting, an artist can use a panoramic format—a stretched rectangle that is much wider than it is tall.

▼ **Panoramic format** Here the artist has chosen a format that is two-and-a-half times wider than it is tall. The huge size creates a powerful impact. The format suits the depiction of the Roman god of the sea driving the wave forward as a line of white horses. *Neptune's Horses*, Walter Crane, 1892, 33¼x85in



▲▶ **Landscape format** In this painting a wide format has been used to good effect, with the horizon a pleasing two-thirds of the way up the canvas. The same scene painted in an upright format might have resulted in the sky and land competing unsatisfactorily for attention. *Classical Landscape*, Gaspard Dughet, c1650



Framing



The standard formula for the ideal classical landscape was established by the French artist Claude. The landscape is usually framed by tall trees in the foreground, which act like curtains on a stage, adding depth to the scene beyond. Claude's landscapes are not real places, but are based loosely upon the landscape around Rome. His framing device has inspired generations of landscape artists.

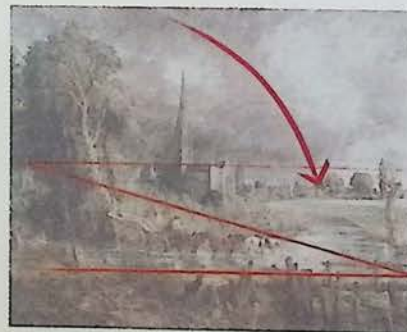


▲▲ **Framing the view** The frame of trees draws your eye into the picture. The weight on the right is offset by the figures pointing to the archway in the middle distance. *Landscape with Hagar and the Angel*, Claude, 1646

Depth

Creating a sense of depth is paramount in traditional landscape painting: the artist tries to make the spectator look from the foreground into the middle ground and then the background. Paths or rivers are an effective route into a picture, as are figures, animals, or other points of interest dotted strategically through the picture like stepping stones to lead your eye toward the focal point.

▼▶ **Focal point** The river and rainbow in Constable's painting both lead your eye to the focal point—the cathedral. The river is particularly important because of the way in which Constable has highlighted the water and the light on the field behind, allowing the eye to roam backward and forward across the picture. *Salisbury Cathedral from the Meadows*, John Constable, 1831



▲ **Total picture** Chinese painters aimed to offer a vast and limitless landscape with varying viewpoints—the opposite of the single, fixed viewpoint of the Western spectator. *Mountain View*, Ming dynasty, 1368–1644

Opening out

Artists do not always want to contain a scene within a framing device. Open-sided paintings suggest space beyond the confines of the canvas, widening the pictorial scope. The artist leaves something to your imagination hinting that there is more than literally meets the eye.



▲▲ **Expanding the horizon** The vast expanse of sky above is matched by a seemingly limitless horizontal landscape. The artist has retained interest by alternating areas of light—the sunlit fields, castle, and water—with dark woods, mirrored with subtlety in the sky. *Landscape with Ruined Castle and Church*, Jacob van Ruisdael, c1665–70

Still life

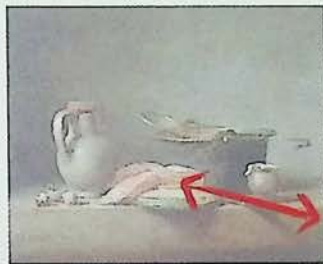
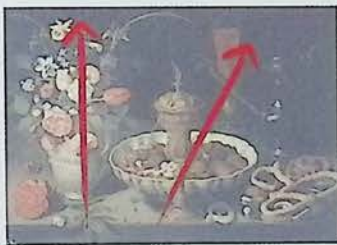
The advantage of a still life over landscapes or portraits is that the artist has complete control over content, composition, and lighting. While painters can edit details of a landscape, there is no need to with a still life. They can select objects and arrange them exactly as they wish, tinkering with the composition for as long as they like, without trying the patience of a portrait sitter.

Composing

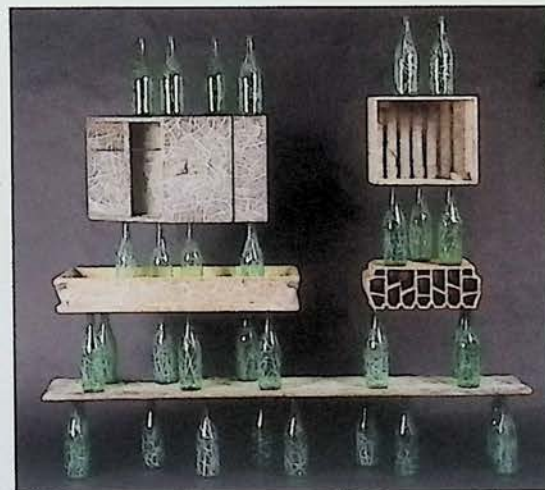
Still lifes are generally indoor compositions, but even in the smallest interior the artist wants to convey the interaction of space and form. Still life is a chance for an artist to show his or her skill at creating a balanced, pleasing composition, which shows off colors, forms, contrasts in texture, and their relationships to each other. Try turning a still life upside down—the composition should be just as satisfying as it is the right way up.



▲► **Height and depth** In this Dutch still life the artist has built up height from right to left and given her painting depth by setting objects behind one another. *Still Life of Flowers and Dried Fruit*, Clara Peeters, 1611



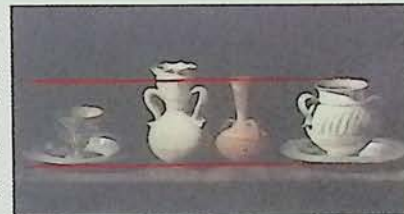
◀◀ **Directing the eye** The knife handle projecting from the edge of the table appears to come out of the painting toward you. The artist has placed it there to act like an arrow into the painting. *Copper Cauldron with a Pitcher and a Slice of Salmon*, Jean-Siméon Chardin, c1750



▲ **Linking shapes** By repeating similar objects, the artist encourages you to see them as a design in which the spaces between the solid shapes are just as important as the shapes themselves. *Grey Container*, Tony Cragg, c1980



▲► **Line-up** The dark background adds an air of mystery to this painting and adds a surreal dimension to everyday objects that are lined up almost as if they were sacred. *Still Life*, Francisco de Zurbarán, c1650



Abstracts

Artists do not always want to copy nature: they may use it as a starting point and transform it beyond recognition. Piet Mondrian drew his abstract forms from landscape, but believed if you reduced a picture to its bare essentials you would gain a spiritual experience unhampered by associations with the natural world. Expressionist artists, such as Wassily Kandinsky or Mark Rothko, stylized and exaggerated forms to state their own feelings or provoke a response.

Semi-abstract

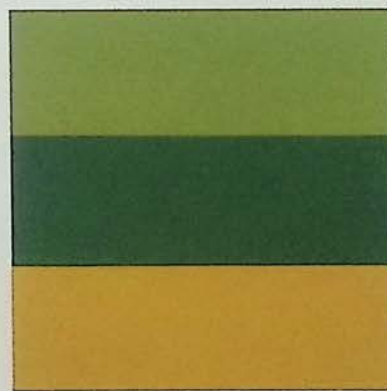
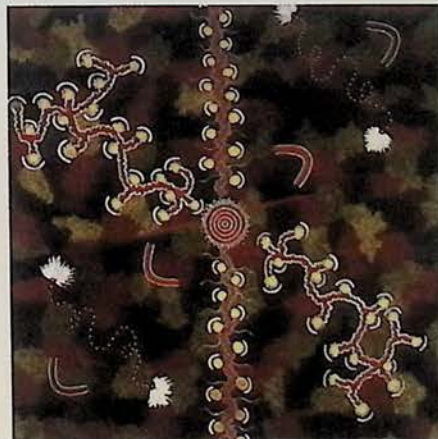
In semi-abstract works, there are hints of recognizable subject matter. Some Impressionist paintings are semi-abstract because the subject has been used as a vehicle for showing light effects. Most 20th-century abstract painters went through a semi-abstract phase, but only Monet stayed true to the ideals of Impressionism.



◀ **Fleeting glimpses** In this semi-abstract composition of shimmering colors Monet has tried to capture the ever-changing light made by reflections on water. You can, however, just make out the waterlilies. *Waterlilies and Reflections of a Willow Tree*, Claude Monet, 1916-19

Wholly abstract

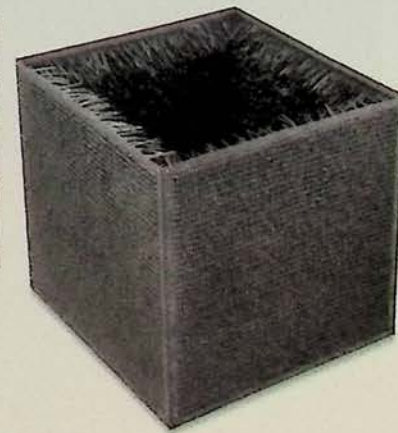
The Dutch painter Theo van Doesburg said in 1930 that art had "no significance other than itself" and "nothing is more real than a line, a color, a surface." Art that does not represent the physical world in any recognizable way is called non-representational, or abstract.



◀ **Geometric abstraction** Sharp-edged rectangular blocks of color are removed from immediate connotations with the natural world. *Train Landscapes*, Ellsworth Kelly, 1952-53



◀◀ **Aboriginal expression** Elements of asymmetry within the overall symmetry make this personal vision an aesthetically pleasing composition. *Men's Dreaming*, Clifford Possum Tjapaltjarri, 1990



▼ **Minimalism** Eva Hesse believed that basic geometric forms, such as a cube, arouse specific emotions in the viewer. *Accession II*, Eva Hesse, c1960

Perspective and viewpoint

For artists who want to convey an impression of space and depth, perspective is the key. Some aspects of it can be worked out mathematically, but many artists reach a similar result through intuition. Viewpoint—the position from which both the artist and spectator look at the picture—has a bearing on perspective.

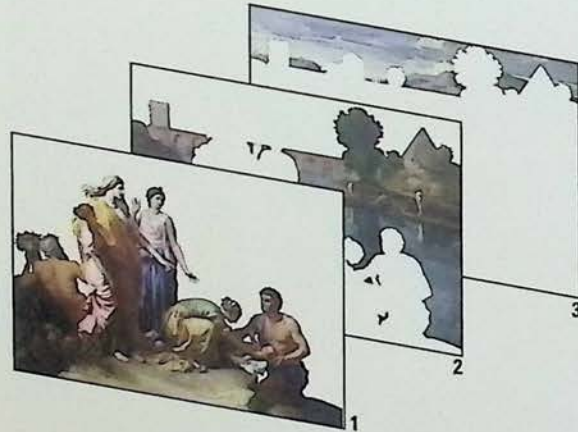
The illusion of reality

Since the Renaissance most Western painters have wanted to make it look as if the picture they are painting on a flat surface is three dimensional—has depth as well as breadth, like the real world. There are many ways to create this illusion, such as making the same object look smaller the farther away

it is, which the viewer interprets as a visual code for depth. Artists make the most of such visual devices and use them to represent the real world around us. Many, however, from the Ancient Egyptians to modern painters, have had no interest at all in creating the illusion of three-dimensional work.

Picture plane

When painters talk about the picture plane, they are describing the flat surface of the picture as if it were a pane of glass. Artists can accentuate the flatness with a decorative design or they can create the illusion of depth, visually piercing the pane of glass, like a window offering a view of a scene beyond.



◀ **Picture zones** This scene has been composed in three zones to give it depth: the foreground (1), where most of the action takes place, the middle ground (2) where the boats are, and the background (3) beyond the aqueduct. *The Finding of Moses*, Nicolas Poussin, 1638

Overlapping

One simple way for artists to give a picture depth is to overlap the figures or other elements of the composition. The viewer reads this as a representation of what happens in the real world—one thing behind another automatically translates as distance. Also, the farther away an object is, the smaller it looks.



◀ **Layers** Overlapping the horses and jockeys has created a sense of space receding into the distance. *The Race Course*, Edgar Degas, c1876-87

Aerial perspective

Sometimes called atmospheric perspective, aerial perspective mimics the natural effect of light that makes things in the distance appear paler and more blue than those in the foreground. Things also seem closer if they are in sharp focus, but farther away if they are hazy. Renaissance artists often accentuated the effects of light on distance by painting the foreground green, the middle ground brown, and the background blue. Later artists tend to blur the distinction between one zone and another.



▶ **Hazy hills** Aerial perspective is most effective when painting landscapes. These mountain ranges become blue in the middle distance and paler in the background. *Landscape in the Riesengebirge*, Caspar David Friedrich, 1810-11



▶ **Chinese landscape** The detail in the foreground is crisp and dark, whereas the craggy outline in the background is faint. The middle ground bridges the distance between the two. *Willows and Distant Mountains*, Ma Yuan, Song dynasty (960-1279)

Linear perspective



◀ **Getting narrower** The sides of the road seem to meet at a vanishing point (1). The small figure on horseback draws your eye into the painting, taking you down the road. *The Poplar Avenue*, David Cox, c1820

If you look down a straight road, the sides appear to converge in the distance. Eventually they seem to join up, at a point known as the vanishing point. You know that the road sides do not actually meet, but you interpret it as a sign of distance. Artists exploit this mathematical law of linear perspective, also called single viewpoint perspective, or one-point perspective, to convey space.

FORESHORTENING

Foreshortening—making an object look shorter than it really is to create the illusion of recession—is an extreme example of linear perspective. The term is often applied to the human body when shown in poses that compress its length. It makes the part nearest you look larger than those farther away.

▼ **Master of foreshortening** In this Renaissance picture Christ's body looks very short and his feet appear larger than his head. Perspective had just been discovered, and the foreshortening would have been even more startling to contemporary viewers than it is now. *The Dead Christ*, Andrea Mantegna, late 15th century



Viewpoint

You automatically stand farther away from a large picture than a small one, to take it all in. It's also natural to peer closely at a detailed image, then move back to look at loose brushwork, for example. If you are in an art gallery, the picture you are looking at was probably intended for a different setting, such as a church, a palace, or a house, so you are at the mercy of the curator's

Portraits

Whether the painter is looking up or down at their sitter affects the psychological impact of the portrait, just as a conversation between a standing person and a seated one puts the two on an unequal footing. If the artist—and, therefore, the viewer—looks up at the sitter, the sitter appears powerful and dominant. If you look down on the sitter, the roles are reversed: you are in the position of strength and the subject of the portrait looks vulnerable as a result.

▼► **Looking up** Despite his youth, the young Italian nobleman in this painting looks haughty and imperious because the artist was looking up at him and therefore gave him the psychological advantage. *Portrait of a Halberdier, Jacopo Pontorno, c1528–30*



◀◀ **Looking down** By looking down at himself and bringing his face right into the foreground, the Expressionist painter Kirchner emphasizes his frailty. The exaggerated perspective, which makes the bed frame look large in relation to the window, heightens the effect. *Self-portrait as an Invalid, Ernst Ludwig Kirchner, 1917–20*



decision on how high to hang it. In fact, the artist had already decided on which viewpoint to use before he started work on the painting. From the Renaissance until the 20th century, when many rules about how to convey depth and reality were broken, most artists took a single viewpoint. They stood in one place and simply painted what they saw from that spot.

SPATIAL DISTORTION

Distorting the perspective, or including two or more different perspectives, is unsettling as your brain cannot follow the visual conventions normally used to make things look real. Some painters, such as Paul Klee, play around with perspective with childlike glee, while others, such as de Chirico, change the rules to disturb you and make you feel you are dreaming. Cézanne changes his viewpoint to mimic how you look at objects in real life, moving around and looking at them from here and there.

▼ **Odd perspective** In this painting de Chirico has created a visual cul-de-sac with a wooden path that ends abruptly. The effect is surreal. As if on a diving board, you are dared to jump into the street beyond, where the buildings look like dollhouses compared with the mannequins in the foreground. *Disquieting Muses, Giorgio de Chirico, 1925*



Landscapes

The horizon line in a landscape equates to the painter's eye level. The artist can maximize the amount of land visible by taking a mountain top viewpoint and looking down over lower ground. The highest viewpoint is a bird's eye view, in which the artist looks straight down at the landscape below. A worm's eye view, from which the artist looks up, as if lying on the ground, is at the other extreme. Some artists shift viewpoint within a painting.



◀◀ **High horizon** Although you are looking down at this landscape, there is also a sense of a shifting viewpoint, as you can see it from several angles, particularly in the foreground. *Rocks at l'Estaque, Paul Cézanne, 1879–82*



◀◀ **Low horizon** The Dutch made a virtue of their flat country, creating a national tradition of landscape painting. Here the artist has taken a low viewpoint that emphasizes the expanse of sky. He has contained the landscape with a frame at the left but suggests it is endless at the right. *Dutch Landscape with Skaters, Salomon van Ruysdael, 17th century*



Light and shade

Like perspective, lighting is a tool that artists can use to make a painting look realistic. Showing the play of light makes objects look three dimensional even on a flat canvas. They are paler where the light falls and darker in shadow. Seeing color in terms of black and white is called "tone."

Direction of light

When looking at an artist's use of light, the first point to consider is its source. The easiest way to determine this is to look at the direction of the shadows and see where the highlights fall. This helps you work out how high or low the light source is as well as where it is coming from. Whatever the direction, artists interested in realistic depiction tend to light their pictures from the side or

another angle, to create tonal contrasts. Screwing up your eyes makes it easier to see where the main areas of light and dark in a painting are. Sometimes a painting is lit from more than one angle. The sun is the main source of natural light. In an indoor scene daylight might come through a window, or the artist may use artificial light, which remains constant and can be controlled.

Front lighting



When the light shines straight from the front, it spotlights the action in the foreground of the painting. It bleaches people and objects, and casts shadows behind them. You cannot see the shadows. It is more common with front-lit paintings to angle the light from one side or the other, creating visible shadows to help define shape and form.

▶ **Falling light** Here the light source is shining down from the top center left of the canvas toward the kneeling Lady Jane. It throws her pitiful figure into sharp, pale relief against the darker backdrop and picks out the face of her lady-in-waiting. *The Execution of Lady Jane Grey*, Paul Delaroche, 1833



Back lighting

Particularly effective in landscapes, back lighting makes the horizon glow and draws the eye toward it. Backlit figures or objects look dark and indistinct but have an aura of light around them. As with front lighting, it is rare to have the light source pointing straight at the viewer because everything would be in shadow.



◀ **Sunny glow** Here the sun is low over the horizon, casting long shadows toward the viewer. *A Seaport*, Claude, 1639

Side lighting

Light shining from either side works well for portraits and still lifes because it creates an even division of light and shade. The artist can show the full tonal range of the subject matter, which helps to define shapes and make things look convincingly solid. Indoors, the light may come from a window, sometimes shown in the painting, or be artificial, in the form of a candle, a lantern, or a light bulb.



◀ **Realistic lighting** Here Vermeer used side lighting, to help him model light and shade on the girl's face. The light comes down at a slight angle to highlight her vibrant hat. *Girl with a Red Hat*, Jan Vermeer, c1665

Three-quarter lighting

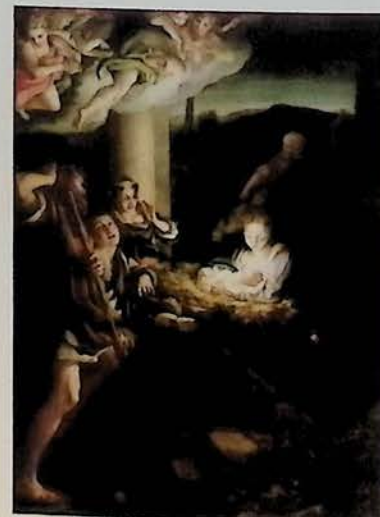


◀ **Tonal range** The shadows in this still life point diagonally down to the right, throwing the objects into relief. *Still life with Dead Birds, Fruit and Vegetables*, Juan Sánchez Cotán, 1602

A light source near one of the top corners of the canvas is also popular for indoor subject matter. It creates a full range of tones and seems to push the objects forward, making them appear more solid and realistic.

Lit from within

Sometimes a painting has no external light source, as the light comes from within the picture and radiates outward. An inner light source creates an intimate feel that suits certain types of painting, such as genre (scenes of everyday life). It is particularly apt for religious scenes, in which the light emanates from holy beings and symbolizes godly powers.



◀ **Inner light** In this scene, light helps you to see the birth as the shepherd does. The light from the Christ child leads the eye out in all directions and is reflected in Mary's face. *Nativity Scene*, Antonio Correggio, 1522–30

Quality of light

As both its source and quality affect how light reveals form, the artist not only has to decide what direction the light will come from, but also what kind of light it will be. Light contributes to the mood of a painting. It can be soft and gentle or harsh and razor sharp. It may cast a garish glare or be as uplifting as a summer's day. It can create a claustrophobic atmosphere or an elating

feeling of freedom. Like all aspects of looking at a work of art, light does not work in isolation but blends with color, style, and technique to create an overall harmony. Not all artists want to paint naturalistically. For those who want to depict inner truths or a spiritual world, reality, in terms of tonal contrasts, is less significant and the lighting can be uniform and flat.

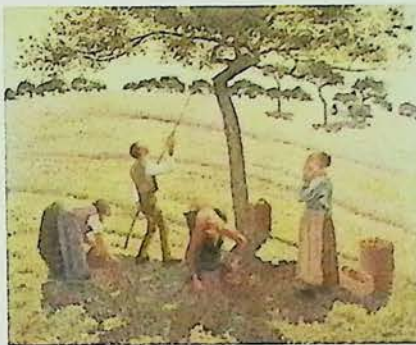
Diffused lighting



◀ **Soft tones** Fog envelops Friedrich's landscape like a blanket. The snow and the pinkish sky create two faint sources of light. Apart from the dark tree standing out against the snow, there are only subtle tonal variations from light to dark in the foreground, middle ground, and background. *Winter Landscape*, Caspar David Friedrich, c1811

Dim lighting subdues a painting. It creates neither highlights nor noticeable shadows and narrows the range of tones. The artist may choose naturally diffused light, such as mist, or filter artificial sources of light.

Colored lighting



◀ **Brightness** The midday sun fills this scene with golden light and creates a warm feeling. *Apple Picking at Eragny-sur-Epte*, Camille Pissarro, 1888

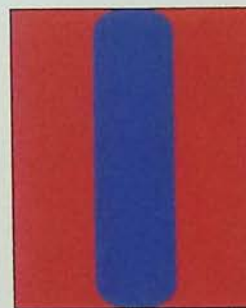
Light can dominate a painting. Coloring the light draws attention to it and affects the painting as a whole, just as a tinted filter suffuses a photograph. Colored lighting creates a mood, whether sunny or sad. If the light is colored, the shadows are, too. The tonal contrast is narrower with colored lighting because even yellow is darker than white. Its corresponding shadows are therefore lighter in tone than black.

Flat lighting

Apart from some Chinese paintings, light and shade is a European obsession, particularly from the Renaissance until the Modern era. Artists who are not concerned with imitating the physical world do not need to use light and shade to make people think that their paintings or drawings are three dimensional.



▲ **Spirit worlds** The path taken by the soul on its journey to the other world is in a stylistic language that excludes light effects. *Aboriginal bark painting*, undated



◀ **Color relationships** The visual language of this painting does not rely on tonal contrast or trying to make things look three dimensional. *Blue Red*, Ellsworth Kelly, 1964

Strong lighting

Bright light creates sharp tonal contrasts with brilliant highlights and dark shadows, and throws detail into focus. Strong lighting works best when it comes from an angled source to emphasize the play of opposite ends of the tonal range. The Italian word *chiaroscuro* (meaning light-dark) is sometimes used to describe how artists distribute light and shade to depict form.



◀ **Gritty realism** The strong light in this painting creates dramatic tonal contrasts and focuses the eye on the most important point in the story—St. Thomas's contact with Christ's wounds. *The Incredulity of St. Thomas*, Michelangelo Merisi Caravaggio, c1602–03

Spot lighting



◀ **Shaft of light** Artistic device and symbolism are fused in this painting. The moonlight symbolizes the Roman moon goddess Diana and draws attention to the beautiful face and form of Endymion, sent to sleep forever in return for perpetual youth. *The Sleep of Endymion*, Anne-Louis Girodet, 1791

Another dramatic way to light a painting is to focus a beam of light on one area. As on a stage, it focuses your attention on the spot-lit section, thrown into dramatic relief by the surrounding deep shadow.

HIGHLIGHTS

Artists use highlights to show pinpricks of light. They can make a surface look shiny or show movement on water. Because highlights are the lightest tones in a picture, they catch your eye, like a lit window on a dark night. In oil painting, artists traditionally work from dark to light and add highlights last. Thick paint can heighten the impact. Highlights do not have to be white to be effective: Velázquez, for example, also used lemon-yellow and pale orange.



◀ **Glints** Touches of white make the glaze of a humble earthenware pot sparkle. *An Old Woman Cooking Eggs*, Diego Velázquez, 1618



Media and techniques

Pigment—powdered color—is suspended in a liquid medium to create paint. The medium can be oil, egg, or just water, and when it dries, it binds the paint to the support (working surface). Drawing materials are different as they are already dry. Granules of pigment stick to fibers in the paper. Sculpture has its own set of media: mainly stone, metal, or wood plus a host of modern materials. Each medium has its own techniques. Some media dictate the artist's technique; others are more versatile.

Early media

When it came to paintings, medieval and early Renaissance artists only had one option: egg tempera on panel (wood). The type of wood depended on what grew locally and this is used by art historians as a clue to the country of origin. Italian panel paintings of the 14th to 16th centuries are generally on poplar,

Flemish artists worked on oak, and Germans on pine, fir, linden, or oak. Alternatively, early artists could paint murals, in the form of frescoes, which were popular in Italian churches and chapels. Medieval and Renaissance artists worked to commission, usually to produce work on a religious theme.

Egg tempera

Vibrant and crisp, egg tempera is stable, durable, and the colors remain strong. The medium, however, is egg, usually just the yolk, mixed with water to make a creamy paste. Egg dries in minutes, so the artist cannot blend colors on the surface of the picture or use impasto (thick paint). He has to build up thin layers of paint, using small hatching strokes—lines side by side—to create form. This demanding medium was superseded by oil paints but has been revived several times in recent centuries.

► **Egg tempera on poplar** Early Italian painters prided themselves on mastering the technical difficulties of egg tempera. Many worked in the Byzantine style of the time, using much gilding. *The Transfiguration of Christ, Duccio, 1311*



▲ **1. Underdrawing** Working from preliminary sketches, the artist makes a detailed underdrawing on the top, thinnest layer of gesso or chalk. The drawing shows through where the paint has thinned.



▲ **2. The paint layers** The drapery of the kneeling figure is painted with green earth and lead white. Magnified x380, some black drawing particles are visible between the paint and the gesso.



▲ **3. Cross-section of gilding** The lines showing the folds of Christ's ultramarine robes are gilded, following the Byzantine tradition. This magnification of x130 shows the gilding on top of the paint.



▲ **4. Fragment of gilding** Magnified x185, you can see the thin gold leaf has worn away from Christ's robes, revealing the yellow-brown of the mordant size that Duccio used to glue on the gold.

► **A Cross-section of panel support** Planks of wood were glued together and planed until smooth (1). They were then covered with several layers of white gesso in Italy, or chalk in northern Europe, mixed with animal-skin glue (2) before being painted (3) and gilded (4).

Fresco

The artist traces a cartoon (detailed drawn plan) on to the wall and paints water-based pigment straight on to wet plaster, hence the word fresco, meaning "fresh" in Italian. The wall has to be painted in sections. When the plaster dries, the fresco is part of it and will last as long as the plaster. Artists can paint on to dry walls, which is easier, but the paint is liable to flake off because it has not bonded with the surface of the plaster. Fresco is only practical in dry climates like that of Italy, as damp damages plaster.



► **Restoring frescoes** Earthquakes are the biggest threat to frescoes in Italy. Restorers try to replace any missing fragments, not to hide the original work or "improve" it with additional paint. This fresco in S. Francesco Church, Assisi, was restored after an earthquake in 1997. *Four Latin Doctors of the Church, Isaac Master, c1290–95*



◀ **Visible joins** Giotto, who painted all four walls of the Scrovegni Chapel in Padua, had to estimate how much work he could do each day, as just that area of wall was plastered first thing in the morning. A face might take a whole day, while flat areas of color were quicker. The boundaries between areas corresponding to a day's work can be seen on close inspection. The areas are called *giornate*, from the Italian word for "day." *Baptism of Christ, Giotto, c1305*

Oil painting

In oil paints the medium is a vegetable oil that dries naturally when exposed to air—olive oil is no good. Linseed oil is the best and most commonly used, although walnut oil was sometimes used in 16th-century Italy, and poppy seed oil in Dutch and French paintings of the 17th and 19th centuries.

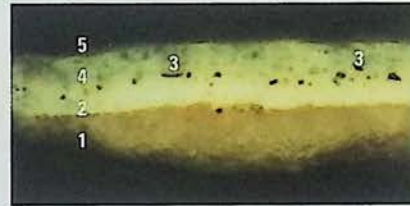
The introduction of oil paint made artists' lives easier and the new medium had replaced egg tempera by the mid-16th century. Oil paint is easy to work and the artist can create a variety of finishes. Venetians started working on canvas and this lighter form of support also gained widespread popularity.

Preparing an oil painting



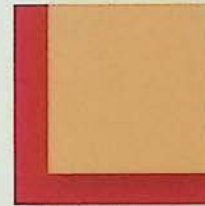
As for egg tempera, the support—be it wood panel or canvas—has to be prepared for an oil painting. Layers of gesso or chalk mixed with animal size create a smooth, absorbent ground, which can be sealed to prevent subsequent layers of paint sinking in. Oil paintings are usually varnished, to intensify the color, show up details, and add gloss. The varnish darkens with age, lasting less well than the paint beneath.

◀ **Layers of a panel painting** The ground layer of chalk and animal glue (1) was sealed with an isolation layer (2). The artist probably added the black particles (3) to darken the layer of green paint (4). Once dry, the painting was varnished (5). *Last Judgement, Jan van Scorel, c1550*



Glazing

Oil paints can be transparent as well as opaque. The artist applies thin layers of paint, letting each layer dry before adding the next, to build up complex, luminous layers of translucent color. This classic use of oil paint, known as glazing, was perfected by the Flemish painter Jan van Eyck. He often glazed over an opaque underlayer of tempera.



▲ **Depth of color** Like laying sheets of cellophane on top of one another, each layer of glaze changes the color of those above and below it. This effect can be seen in the turban. *A Man in a Turban, Jan van Eyck, 1433*



Seamless blending

"All [oil painting] asks of the artist is care and love, for oil in itself possesses the property of making color smoother, softer, more delicate, and more easily harmonized and shaded," wrote the Italian art historian, Giorgio Vasari, in 1550, thrilled by the medium. One of the joys of oil paint is that the artist can work at leisure all over the painting—unlike egg tempera or fresco, both of which demand a piecemeal approach. Oils can be blended on the surface of the painting, to create smooth transitions from one color to the next without leaving any visible brushmarks.



▲ **Subtle tonal shifts** In this Dutch still life, the artist has made full use of the versatility of oils, mimicking the fall of light to model form and show surface textures. Such realism was simply not possible with earlier media. *Vanitas, Pieter van Steenwyck, 17th century*



▲ **Cross-section of a canvas support** Steenwyck's painting is on canvas, made of linen and stretched taut (1). It was then coated with a glue-sizing ground (2), before being painted (3), often in several layers, and varnished (4).



Painting with a knife

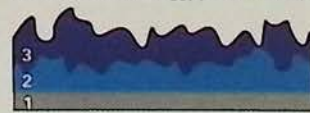
Oil paint is usually diluted with turpentine or similar solvent (not water, which will not mix with the oil), to make it more runny and easier to work. The thinner also makes the paint dry more quickly. However, oils can also be used really thickly, without being diluted, in a technique called impasto. While Old Masters tended to reserve impasto for pale, opaque highlights, modern painters sometimes revel in thick paint for its own sake.

► **Troweling it on** Frank Auerbach is renowned for his flamboyant use of impasto, in which the marks of the palette knife are strikingly apparent. *Head of Gerda Boehm, Frank Auerbach, 1965*



▲ **Application** Cranked shaft and straight painting knives are available for impasto knife-painting.

▼ **Impasto cross-section** Instead of smooth, thin layers, the canvas (1) is loaded with thick, craggy paint (2 and 3).



OIL ON COPPER

Flat copper is rigid, as long as it is small, and provides a smooth, non-absorbent surface. It is suited to detailed painting and jewel-like color with good contrast of light and shade. Some artists, such as Elsheimer, made a career out of painting on copper.



▲ **Grandeur on a small scale** The detail in this painting on copper is exquisite, despite the small scale of 11¼x9¼in. *Ceres and Stello, Adam Elsheimer, c1600*

Media on paper

Paper is absorbent but, unlike canvas, is not strong enough to take layers of priming and oil paint. It is, however, ideal for drawings in a variety of media as it is light and portable. Paper is made up of a web of fibers that file off particles of lead, charcoal, or whatever the artist is drawing with. Even paper that looks completely smooth has enough fiber to catch all drawing media. Heavier papers are suitable for watercolor, a water-based paint that is usually applied in thin washes. Textured papers tend to be used for their interesting surface rather than any specific function.

Watercolor

Built up in washes of delicate color, watercolor is transparent and lets the white of the paper shine through. It is good for sketching as all the artist needs is cakes of paint, water, and brushes. Watercolor can also be used for more detailed work by letting one layer of paint dry before applying another.



► **Wet-on-wet** Washes of paint have been applied to wet paper for the canal. The artist has sponged out areas of paint to create highlights. *Palazzo Dario, Venice, Hercules Brabazon Brabazon, c1870*

◀ **Fine detail** Watercolor is traditionally used for botanical, bird, and animal illustrations. It combines the detail of a drawing with the color of a painting. *Golden Pheasant, Ch'ien-lung period (1736–95)*



Pastel



► **Vivid sketch** Degas described himself as a colorist with line, using pastel as a bridge between drawing and painting. *Blue Dancers, Edgar Degas, c1899*

Pastels—sticks of color bound with gum or resin—have existed in their modern form for over 200 years. They come ready-mixed in a range of tints and shades and are applied directly, usually to mid-toned paper. Hatching (parallel lines), as on the back of the central dancer above, is one way of creating tone in this versatile medium. Colors can also be blended or layered.



► **Highlights** Degas let the tinted paper show, to make highlights on the dancers' shoulders and arms. Its pallor stands out against the predominant deep blue.



► **Strength of color** Blending blues on the paper creates a matte, dense area of blue on the dancer's bodice.

Conté crayon

Named after Nicolas-Jacques Conté, an 18th-century French scientist, conté crayons can be used on their side to build up tone or held like a pencil for linework. The pigment in conté crayons is bound with a waxy or oily substance, so they are harder and less crumbly than pastel or chalk. The particles stick to the paper and do not need fixing (spraying with liquid resin to hold them in place).

► **Velvety tones** Seurat is renowned for his tonal drawings in conté crayon. He created tone solely with differing pressure. *Study for "La Grande Jatte," Georges Seurat, 1884*



◀ **Conté crayon colors** From the left, sepia, sanguine, and bistre are the core earth colors. White and black are common, too, and nowadays a wider range of colors is available.



Pencil



Rods of graphite—a carbon mineral—encased in wood date from the 16th century. Confusingly, until about 1800, the word "pencil" was used to mean a small brush. Nicolas-Jacques Conté created pencils of differing hardness, which were used to great effect by French artists such as Ingres and Géricault.



► **Crosshatching** The tone on the horse's flank was created with crosshatching (a lattice of parallel lines). *Rearing Stallion Held by a Nude Man, Théodore Géricault, c1820*

Ink

First used in China and Egypt around 2500 BCE, when blocks of lampblack ink were mixed with water, ink is suitable for writing or drawing—Chinese artists combine the two. It can also be used for detailed work.

▼ **Pen** Drawn freely with a sparing use of line, this drawing is all the more expressive. *Yvette Guilbert, Henri de Toulouse-Lautrec, 1894*



► **Brush** In this Chinese painting poetry and image are integrated calligraphically with ink. *A Chicken, Cockscomb, and Chrysanthemum, Li Shan, 18th century*

Charcoal

Dating back to ancient Rome, charcoal is easy to rub off on the drawing surface. It is therefore a favored choice for underdrawing, because it is easy to correct mistakes and its impermanence does not matter if it is going to be covered up. As a finished work, it must be sprayed with fixative (liquid resin) for the drawing to last.



◀ **Light and dark** The tonal and linear potential of charcoal are exploited to record the grooves and hollows of the man's face. *Head of a Man, Lucian Freud, 1990*

► **Willow charcoal** Charcoal sticks make a smudgy gray mark. Charcoal also comes in compressed form, which creates an intense, velvety black, or pencils, which are easiest to handle.



Chalk

This medium, used in prehistoric cave paintings, came into its own in the High Renaissance in the hands of Leonardo and Michelangelo and, later, Rococo artist Watteau. White chalk came from limestone, red from red earths, and black from stones such as shale. Nowadays, chalk pigments are often made synthetically, bound, and then pressed into sticks rather like pastels or conté crayons.



► **Human form** Red chalk is used to describe how the muscles ripple as the body moves. *Study for the Creation of Adam, Michelangelo, c1508*

Printmaking

The advantage of prints is that the artist can reproduce the same image over and over again. The picture is printed from a metal plate, wooden block, or other surface on to a sheet of paper. There are two main types of print: in relief prints such as woodcuts or linocuts, the parts to print black are left in relief and the remainder cut away. Intaglio prints, such as engravings and

etchings, are passed through rollers like a mangle and ink is forced into incised furrows. The more recent technique of lithography is a surface method in which the print is taken from a flat slab. The antipathy of grease and water separates the areas that receive or reject the printing ink. Screenprinting is a stencil method, in which color is brushed through on to the paper beneath.

Woodcut



A Graphic image Belgian graphic artist and painter Frans Masereel gouges out the areas to be white in the printed sheet. Woodcuts create strong images with tonal contrast. *Frans Masereel, 1924*

For a woodcut, the drawing is transferred to a woodblock. The blank areas are gouged away, leaving the drawing in relief. The drawing prints black and the other areas stay white. The printmaker cannot vary the depth of color as the relief surfaces are of equal height. The raised strips of wood have to be thick enough to withstand the pressure of printing, so the result is bold and graphic.

Lithograph

The design is drawn with greasy chalk on to limestone or a synthetic equivalent (often zinc or aluminum today), which absorbs both grease and water. When the drawing is completed, the stone is wetted. Water only penetrates the part of the stone that is free from grease. Greasy ink is rolled on to the stone. It is repelled by the wet surface but sticks to the greasy chalk and can then be transferred to paper. Multicolored prints can be made by inking different parts of the stone with different colors.



A Posters Multicolored lithography was used to make eye-catching advertising posters in the 19th century. The technique allows the artist to combine line and color. *The Simpson Chain, Henri de Toulouse-Lautrec, 1896*

Personalizing a print A large part of the American artist Jasper Johns's output is prints. Here he is shown working on a wax model for an embossed lead version of *Numerals* in 1968.



Etching



A Free-flowing lines Rembrandt was as great a graphic artist as painter. His etchings show the free-flowing lines typical of the medium. Tone is created by hatching (close parallel lines). *Self-portrait with Wife, Rembrandt, 1636*

A metal plate is covered with an acid-resistant layer of wax or resin and the lines of the image are scratched into it with a needle. When the plate is placed in an acid bath, the metal exposed by the drawn lines is eroded by the acid. The plate can then be inked and printed.

Engraving

The engraver incises the image on to a metal plate. The deeper the furrow, the stronger the line. The plate is inked, then wiped clean so that ink is only left in the incised lines. The plate and a dampened sheet of paper are then passed through the rollers of the printing press. The pressure forces the paper into the inky grooves of the plate and the image is transferred to the paper.

Sharp versus grainy
The engraver uses a tool called a burin. Its shaped metal point cuts a V-shaped groove (1), producing a sharp, clean line. Etching lines tend to be slightly fuzzier, with a granular texture (2) where the acid seeps out.



Hard lines Dürer's work shows how fine and clear engraved lines are. This demanding technique requires great control and precision on the part of the engraver. *Nemesis (The Great Fortune), Albrecht Dürer, c1501-02*

Screenprint

A refinement of the stencil printing used by textile printers, screenprinting was adopted by artists in the United States in the 1930s. A finely meshed silk screen is stretched over a wooden frame, then a cut stencil design is attached to it, and paper placed underneath. Color is forced through the unmasked area of the screen, leaving the cut stencil image on the paper.



A Printing process The stencil is put in place, ready for the color to be pressed through on to the paper beneath.



Bold design Screenprinting is an ideal medium for producing graphic blocks of strong color, as in this design. *Start 2000, Bridget Riley, 2000*

Modern media

The explosion of new media in the 20th century prompted a reappraisal of the whole purpose of art. Artists no longer had to reproduce reality faithfully as photographers could do it better, and films took on many of the traditional narrative roles of painting, such as stories of battles and religious or historical subjects. The invention of new materials also gave artists scope for different methods of working. Acrylics revolutionized painting in the 1950s and 60s, and plastics and polymers led to innovations in three-dimensional work.

Collage

In the early 20th century, the Cubists Pablo Picasso and Georges Braque made collage, traditionally used in scrapbooks, into an art form. A collage (from the French verb *coller*, meaning to stick or glue) is a composite image made by sticking newspaper cuttings, photographs, and other printed images on to a flat surface, often combined with paint. By definition, collage uses mixed media—more than one medium—in a single work. Mixed media can also mean using more than one type of paint, or both painting and drawing media.



◀ **Modern statement** Scraps of newspaper, factory chimneys, and sticklike figures are juxtaposed on brown paper to suggest the bleakness of life in an industrialized world. *Industrial Landscape*, Julian Trevelyan, c.1950

Assemblage

Assemblage is a three-dimensional form of collage. The French artist Jean Dubuffet coined the term in 1953 to describe a collage, made from objects such as household items, which transforms everyday things into a work of art. The word is used more loosely to apply to photomontage—sticking parts of different photos together to make an image—and ready-mades such as Marcel Duchamp's *Fountain* (see p.467), tableaux, and installations.

▼ **Found objects** A miscellany of items including a paintbrush, hat, spoon, and stick, has been used here to create a mixed media assemblage. *Saddle, Provisions, Tools for the Primary Surveyor*, Tim Storrier, 1982



Acrylics

After centuries of oils dominating painting, acrylics were developed in the 1940s. Made from pigment, acrylic polymer emulsion, and chemicals that control texture, stability, and durability, acrylics can be thinned with water and used like watercolor, or applied thickly like oils, with the advantage that they dry within hours. Acrylics can be applied to all types of surface, on their own or with other media, and act as a glue and sealant in collages. They come in a huge array of colors and finishes.



▲ **Acrylic palette** Colors come in a variety of consistencies, from fluid to pasty, and adding water makes them more liquid. They are also available with different intensities of pigment and various finishes: matte, shiny, or metallic (as above), as well as opaque, semi-opaque, or transparent.



▲ **Thick paint** By adding an impasto medium, Hoyland makes acrylic so thick that it stands out in relief from the surface of the painting. *Farewell Paradise*, John Hoyland, 1995



► **Shiny surface** In this minimalist painting, fine, vertical lines of graphite on a smooth layer of acrylic bear no trace of the artist's hand. *Untitled No. 12*, Agnes Martin, 1990

Installation



Installations are site-specific three-dimensional works. They are not made traditionally, but are assembled from everyday objects so that the artist can dismantle the work and recreate it elsewhere. It is important that the artist's hand is not as visible in the work as it would be in a painting or sculpture.

▲ **Stained glass wall** This installation consists of colored glass framed with steel rods. Although the materials are relatively conventional, the vast size is typical of this recent genre of art. *The Glass Wall*, Brian Clarke, 1998

Sculpture

Sculptors carve hard materials such as stone, wood, or ivory, but model soft materials such as clay, building up the object rather than chiseling it away. Sculptures made from metal are either cast or welded together. Sculptures on buildings are in relief—meaning that they project from the background to a greater (high) or lesser (low) extent. In the past, relief was often used on tombs, sarcophagi, or bronze doors, to depict stories in three dimensions.

Stone

Marble (rock that formed when limestone recrystallized) and stone are very hard, and sculpting them is physically strenuous. This may be one reason why early statues were stylized—they were easier to carve than realistic work. The tools used by sculptors today are the same as in Michelangelo's time: flat- and toothed-claw chisels, drills to create tracks and holes, hammers, and files to reach into areas such as armpits.

▼ **Sculptor at work** Eric Gill chisels away at his sculpture of Prospero and Ariel, one of four external groups he was commissioned to make in the 1930s for Broadcasting House, the headquarters of the BBC in London.

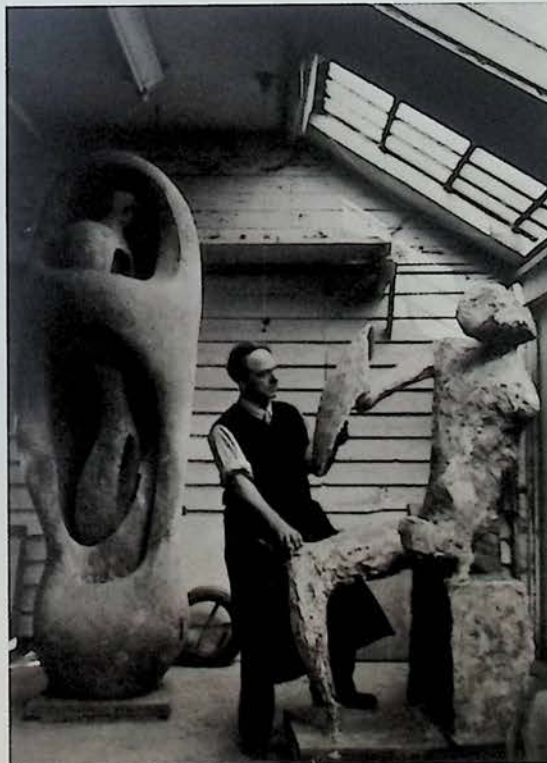


▲ **Work in progress** This unfinished work shows how Michelangelo "released" a figure from a marble block. It is one of a series of figures for the tomb of Pope Julius II. *The Awakening Slave*, Michelangelo, c1520–30



Bronze

Most sculptures made of bronze, an alloy of copper and tin, are created using the lost-wax technique (see box far right), which works on a similar principle to making ice cubes. The bronze is cast from a mold. Since the 18th century, this has often been made in sections (called a piece mold) so it can be removed and reassembled to make a copy of the sculpture. Up until then, the mold had to be broken in order to remove it, so only one sculpture could be made.



▲ **Sculptor's studio** Henry Moore worked in stone, wood, and bronze as well as making drawings and etchings. Cast bronze became his favored medium toward the end of his life.

◀ **Bronze sculpture** With the lost-wax method, the model can be scaled up or down to change the proportions of the finished sculpture and the castings can be made in several versions. All metal develops a patina (surface coloration). This is often greenish on bronze. *Warrior with a Shield*, Henry Moore, 1952

Wood

Like stone, wood is carved, but it is not as hard, making it easier to work. Some woods, such as linden (lime), are particularly soft and can be carved in great detail, hence the tradition of limewood carving around 1500 in Germany, where it was used for altarpieces. Woods such as oak and walnut are harder to carve, but are less likely to rot in damp conditions.

▼ **Wooden figure** Few of these wooden Polynesian ancestral figures or deities survive today because 19th-century Christian missionaries destroyed them. *Nude figure from Raratonga, Cook Islands*, undated



▲ **Painted wood** Nowadays, sculptors emphasize the natural color and grain of wood, but in earlier centuries it was common to paint all carved wood. *Swedish ship's figurehead*, 18th century



LOST-WAX TECHNIQUE

To make a bronze, the sculptor starts with a model of the desired form. By the lost-wax technique, the model is coated in wax and encased in plaster (1). The wax is replaced by molten bronze. Once the bronze has solidified (2), the plaster mold is broken off. The final bronze can be smoothed and polished (3). *Working Model for Draped Reclining Mother and Baby*, Henry Moore, 1982



Color

Color is often one of the most exciting components of a painting, but what exactly is it? Understanding the basic principles of color theory helps you to analyze how artists exploit and manipulate it in their work. They use color together with composition, perspective, and light and shade to strengthen the impact of the subject matter.

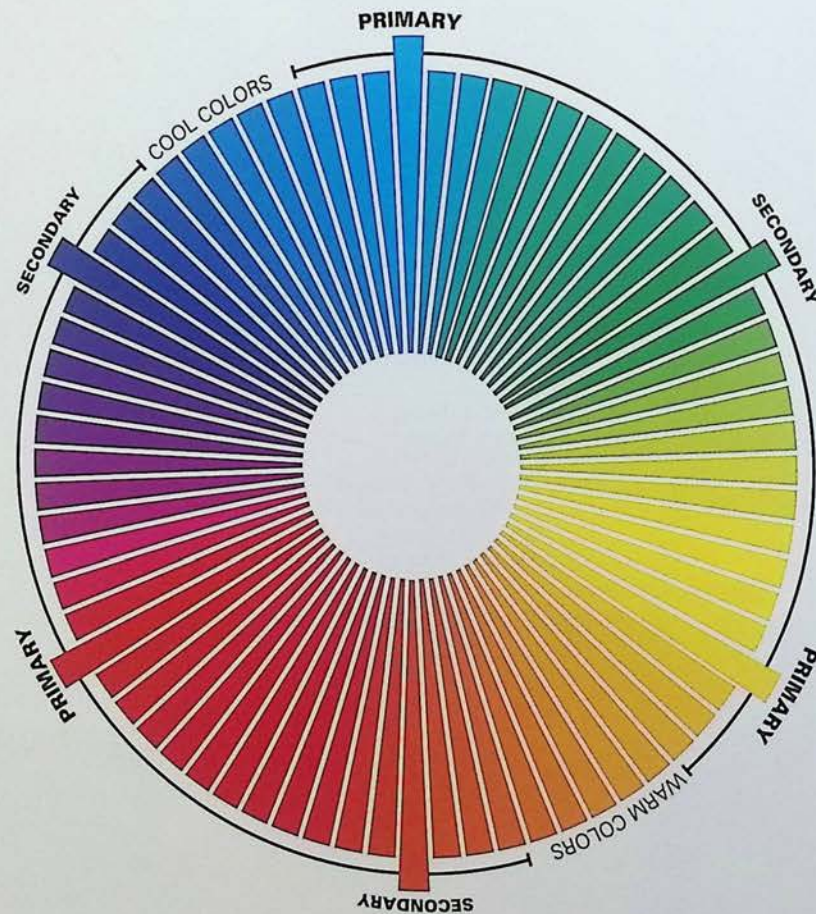
Mixing and comparing colors

The properties of light make colors visible. Light travels in waves of different lengths, and our eyes (and brains) perceive different wavelengths as different colors. The range of wavelengths you can see is called the visible spectrum: the shortest visible wavelengths appear as violet, and the longest as red. Artists use paint made from powdered pigments that absorb some wavelengths and reflect others. Like all colors in the physical world, the colors in a painting are actually the colors of reflected light.

The color wheel

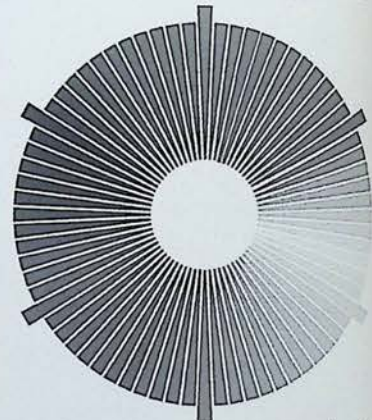
Artists' understanding and use of color was revolutionized in the 19th century, partly thanks to a French chemist Michel Eugène Chevreul. When he was working as the Director of Dyeing at the Gobelins tapestry workshops near Paris, Chevreul realized that colors appeared brighter or duller depending upon the color they were placed next to in a design. To demonstrate how colors modify each other, Chevreul created a color wheel. It shows the three primary colors—red, yellow, and blue—and various mixtures of secondary colors, which are made by mixing two primaries. Chevreul's theories underpinned the Impressionist painters' use of color in the late 19th century. In earlier centuries, artists had used color intuitively.

► **Technical tool** The color wheel links the colors of the rainbow in a circle. The colors are red, orange, yellow, green, blue, and violet (purple).



TONE

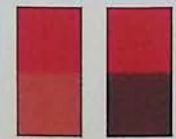
Colors also have tone, which means how light or dark they are. Any color can be made paler or darker by adding white, the lightest tone, or black, the darkest tone. It can have shades, which are darker in tone than the color in its pure state, and tints, which are light tones.



▲ **Tonal value** This black-and-white version of the color wheel shows colors in terms of black and white, which is called tone.

Intensity

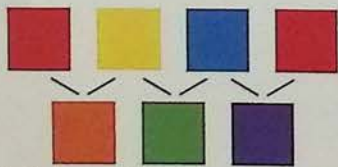
Pure pigment looks vivid and can be described as "saturated." Its saturation can be weakened with water or another thinner, or by mixing in another color. Pure color is bright; when mixed it looks duller. Dull in this sense does not mean dreary—it is just the opposite of bright. Intensity also varies to the viewer according to how bright or dull the surrounding colors are.



▲ **Bright and dull** Red, like any color, can be made duller by diluting the saturation of the pigment (above left) or adding another color (above right). Pure red looks strong and is likely to make any colors next to it appear duller by contrast.

Primary and secondary

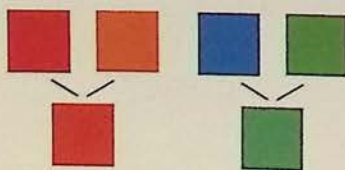
Red, yellow, and blue pigments cannot be mixed from other colors, which is why they are described as primary. All other colors can be mixed from primaries, starting with the secondaries, made from any pair out of red, yellow, and blue.



▲ **Making secondaries from primaries** Mixing red and yellow makes orange; yellow and blue make green; and blue and red make purple.

More color mixtures

When a primary and secondary color are mixed together, they make a tertiary color (also called an intermediary), such as yellow-green or red-purple.



▲ **Tertiaries** Red and orange combine into red-orange, and blue and green create blue-green.

Warm and cool

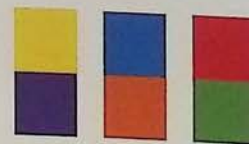
Colors are sometimes described by their "temperature." Warm colors are those in the red-orange-yellow range. Cool colors are on the opposite side of the color wheel—those in the blue-green-violet range. While warm colors appear to advance toward the viewer, cool colors recede.



▲ **The two extremes** Red is hot and fiery and leaps out at the viewer; blue is more understated and drifts into the background.

Complementary

Each primary color is opposite a secondary on the color wheel. These pairs of colors are as different as can be in terms of tone or temperature and visually vibrate against each other. They make each other look brighter when they sit side by side.



▲ **Color contrast** The complementary pairs are yellow and purple, blue and orange, and red and green. Yellow and purple are tonal opposites, while the other two pairs contrast in temperature alone.

Translucence

Some paints, for instance, watercolor, are translucent—you can see through them. Others are opaque, covering up colors beneath. Oil paints and acrylics may be translucent or opaque, depending on the particular paint and how it is used.



▲ **Opacity** If one color completely covers an underlying layer (above left), it is opaque. Translucent paint allows underlying layers to shine through and modify colors above (above right).

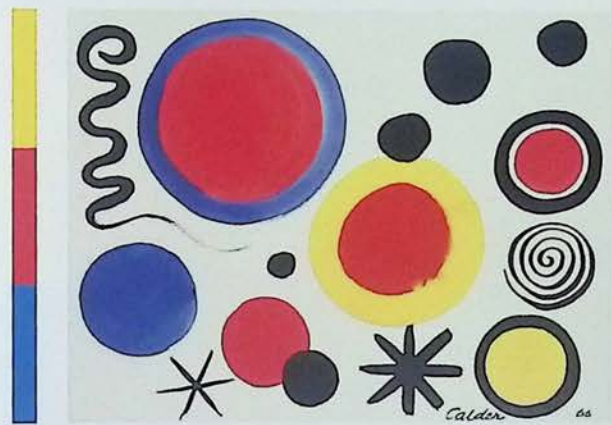
How artists use color

In nature and in art, color has a profound effect on the viewer. Artists can choose and use color naturalistically—to recreate the colors they have seen in a landscape, for example. By convention, grass is green and water is blue but on a closer look they may be made up of many different colors.

However, artists do not have to imitate the colors they see in the physical world. In both figurative and abstract painting, color can be used for its decorative beauty, to create a mood, or to express or arouse an emotion. It can also be used symbolically.

Creating impact

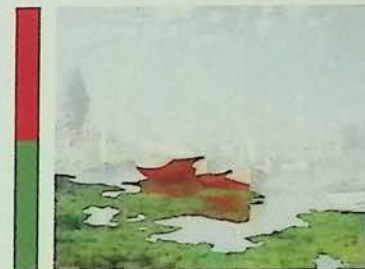
Colors that are close together on the color wheel (see opposite) harmonize with each other when placed side by side in a painting. For the opposite effect, to make colors stand out, an artist can use complementary colors. Modern artists deliberately exploit the visual impact of opposite colors, but painters instinctively juxtaposed complementaries for centuries before the theory was known.



▲ Composing with primaries This painting celebrates the bold freshness of primary colors. Pure black and white are neutral and, like primaries, cannot be made by mixing other colors together. *Untitled, Alexander Calder, 1966*



▲ Light on water Monet was fascinated by the ever-changing shimmer of light on water and used Chevreul's theory (see opposite) to recreate what he saw. He questioned the convention of blue sky or green leaves, preferring to paint the colors he saw, including vividly colored shadows. *Argenteuil, Claude Monet, c1872–75*



▲ ▼ Complementary pairings The orange-reds of the boats and their reflections contrast with the bright green weeds. Likewise, the yellow highlights of the masts contrast with the complementary violet shadows.

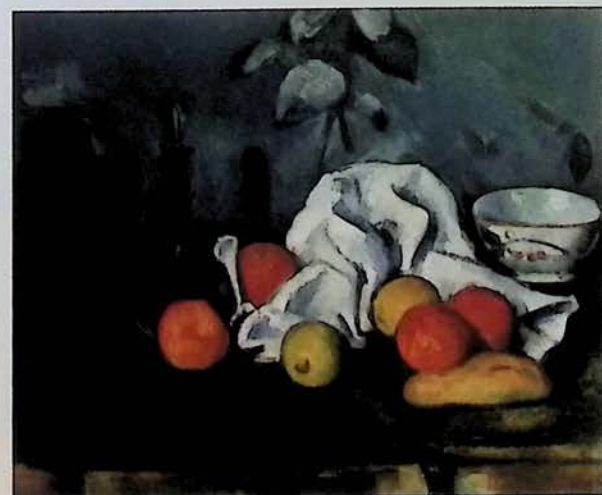


Distance

One of the ways an artist creates the illusion of space on a flat canvas is to use aerial (also called atmospheric) perspective. Distant objects appear progressively paler and bluer, because the shorter blue wavelengths travel through the atmosphere more easily than the longer wavelengths. Artists can apply this principle by using blues and grays to give depth in landscapes. It also works to imply distance in more confined spaces.



▲ ▼ Warm and cool In this landscape Turner exploits the push and pull of warm and cool colors. Warm golds in the foreground advance, and hazy blues recede toward the horizon. *Lake Constance, JMW Turner, 1842*



▲ ► Hot colors Cézanne made the fruit stand out in this painting by using warm colors that instantly catch the eye. Visually, he pushed the cloth, bowl, and background away by making them bluish, to accentuate their distance from the warm fruits in the foreground. *Fruits, Paul Cézanne, 1879–80*



Expressing emotion

Expressions such as "feeling blue" and "seeing red" have come about because color has an emotional effect independent of its subject matter. Wassily Kandinsky, one of the most significant figures in the development of abstract art, thought artists should use form and color not to copy objects but to express emotion and to arouse feelings in the viewer. It is not just bright primaries and secondaries that create a mood. Intermediary or tertiary colors, such as brown, mixed from primary and secondary colors, also affect the viewer, but have a more subtle effect.



◀ Tranquil blue This composition is divided so that the left side relates to worldly existence and the right to the spiritual. The right side is dominated by "heavenly," "restful" blue. *Improvisation 19, Wassily Kandinsky, 1911*

► Reflective mood The muted, monochromatic palette—limited to tones of brown, with contrasts of black and white—contributes to the stillness and serenity of this domestic scene. *A Woman Sewing in an Interior, Vilhelm Hammershøi, c1900*



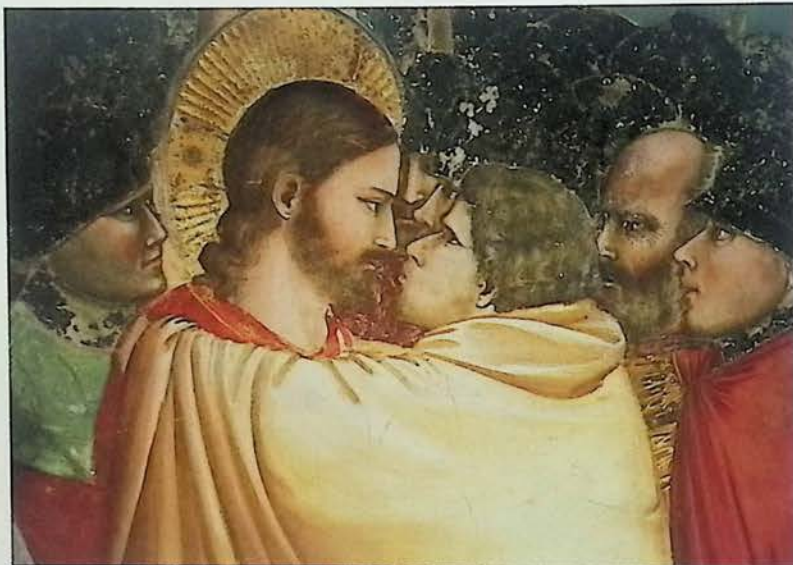
Pigments

The finely ground substance that provides color when mixed with liquid to form paint is called pigment. It does not dissolve, or it would be dye. A pigment can be used in different media, such as oils or watercolor, with some provisos: fresco pigments, for example, need to be alkaline-resistant to cope with lime plaster. Traditional Renaissance pigments came from

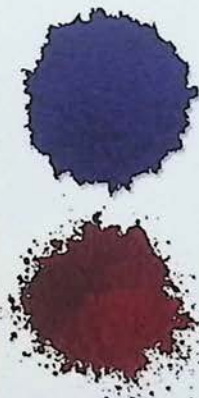
minerals such as rocks and earth—which were made into artificial compounds, such as lead-tin yellow—or came from organic sources. Indigo, for example, was made from a plant and cochineal from insects. Vegetable-based pigments tend to fade with time, whereas other pigments may darken. The transparent green glaze from copper resinate gradually turns brown over the centuries.

Primaries

The most prized blue is ultramarine, made from the mineral lapis lazuli. It had to be extracted from a single source of mines in what is now northeast Afghanistan. Ultramarine was so expensive that patrons specified, sometimes in a separate contract, where in a painting they wanted it to be used—usually on the Madonna's cloak. Cheaper blues, such as smalt, were used for the sky. The only intense red was vermilion, which was either made naturally from cinnabar, a mineral, or prepared synthetically. Lead-tin was an early yellow; yellow ocher was also popular.



◀ **Yellow ocher** This pigment has been used for Judas's robe, applied full strength for the shadows in the folds of cloth, and mixed with white to create the highlights. *Betrayal of Christ*, Giotto, c1305



▶ **Ultramarine and vermilion** Here, the most beautiful blue, ultramarine, has been used for Ariadne's robe and vermilion for her sash. Both preserve well in oil paint, although this picture has been restored. *Bacchus and Ariadne*, Titian, 1520–23



Earth colors

Warm, natural siennas, umbers, and ochers, which make dull reds and mellow yellows, were the staple pigments of the Renaissance and Baroque palettes. Earth colors were stable in oil paint and cheap. They could either be used raw or roasted like coffee to create a richer color. Some artists, including Rembrandt, primed the panel or canvas with an earth color mixture that glowed through the subsequent layers of paint. Any cool colors used contrasted with the overall warmth of the painting.



◀ **Burnt sienna, Spanish brown, and burnt umber** The thick white and gray strokes of the shirt and the slightly blue-tinged flesh tones stand out against the underlying earth colors that suffuse this painting with warmth. *Woman Bathing in a Stream*, Rembrandt, 1654

Black and white



▶ **Tonal contrast** Lead white was used for the ruff in this painting. It makes a striking contrast to the background and draws attention to the sitter's face. *Portrait of a Man*, Frans Hals, c1643–45

Carbon-based blacks included charcoal and the warmer bone black, the precursor of ivory black. Lead white dominated easel painting and, in oils, acted as a drying agent. The faster an oil painting dried, the better it was preserved.

PREPARING PIGMENTS

Renaissance painting was a team effort. Apprentices spent about four years learning their trade, starting with mixing colors. They could collect their own earth pigments and buy in the rarer ones. They had to grind the pigments until they were fine enough to be evenly suspended in the medium and make the strongest color possible. Once they had mastered preparing materials, apprentices moved on to drawing and painting.

▶ **Azurite** This purplish blue pigment acquires a green tinge when it is ground up, making it too green for sky. It was widely used in the Renaissance, as an undercoat or as a cheaper alternative to the fabulously expensive ultramarine.



◀ **The medieval artist's studio** This illuminated manuscript shows a female artist painting an icon of the Madonna and Child in egg tempera. Her brushes are laid out behind her, and an apprentice is grinding pigment with a stone. The pigment was mixed with egg just before use, as egg tempera dries quickly. *French School, 1402*

Technological advances

At the end of the 18th century, a wider range of stable pigments was discovered and by the mid-19th century a huge number of strong new colors had emerged. Packaging methods also improved, making paints portable and far more easy to use. These advances transformed the ways in which artists worked and also opened up painting to the amateur artist.

19th century

Before the 19th century, artists had a limited range of pigments at their disposal. Toward 1800, chromium was discovered and chrome yellow, viridian (chrome green), and cadmium yellow, orange, and red became available to buy. Naples yellow replaced lead-tin yellow. In the 19th century, a whole raft of artificial dyes produced mauve and more stable blues and greens, such as emerald green (later found to be toxic) and cobalt blue. These pigments were strong in color, cheap, and synthetic, and they worked in every medium from oils to watercolor. Even ultramarine was now made synthetically, and called French ultramarine.

► **Portable materials** Manet painted his Impressionist friend Monet at work outdoors, something neither could have done without portable easels, canvases, or tubes of ready-prepared paints. *Monet in his Floating Studio*, Édouard Manet, 1874



► **Monet's palette** Monet is best known for the brilliance of his colors, which he used unmixed. Ironically, in early works he mixed new pigments to make dull colors when he could have used pure earth pigments.



► **Pig's bladder bag** Prepared paint first appeared in the 17th century but the bags it came in tended to burst. They had to be punctured for use, which made any leftover paint dry out and go hard.

► **Collapsible tubes** In 1841, light, airtight metal tubes of paint were invented. This meant that oil-painters could work outside and sketch, as if they were using watercolors or drawing.



◀▶ **Complementaries** Renoir has used blue against the orange boat, to make it look vibrant. A cross-section of the water (right) reveals pure cobalt blue painted over light green. *Boating on the Seine*, Pierre-Auguste Renoir, c1879



► **New colors** The cross-section of the rushes shows that Renoir made full use of the new range of 19th-century colors. The new green, viridian, is laid over chrome yellow.



20th century

The invention of new painting and three-dimensional media in the 20th century was matched by a vast range of pigments, textural possibilities, and finishes. Computer-generated art has widened the artist's possibilities still further and technological advances gather pace in the 21st century.

► **Flat, bold colors** Modern media, such as acrylics and screenprinting, can mimic the effects of newsprint or posters with areas of flat, matte color that mask the artist's hand. Matte need not mean muted; in this screenprint garish color is combined with an impersonal touch that disturbingly dehumanizes the glamorous face of Marilyn Monroe. *Green Marilyn*, Andy Warhol, 1962



► **Graphic quality** Acrylic on tarpaulin has been used to create an image with bold color, thick outlines, and a strong impact. *Untitled*, Keith Haring, 1981



◀ **Wide range** Just as with household paints, artists can now buy a vast range of colors ready mixed, in every medium.



GOLD AND PRECIOUS METALS

Gilding was the standard backdrop for religious pictures, symbolizing the heavenly realm, before realistic settings and landscapes became popular during the Renaissance. Gold was also used for haloes. Gold leaf was laid or stuck on to the dampened area, often spread with red clay to give a warm underglow. The gilded area was then tooled—given patterns with a punching tool—so that it shimmered and sparkled in the candlelight. Occasionally artists used powdered gold paint, called shell gold because it was kept in a mussel shell. Silver leaf was sometimes substituted for gold.



◀ **Medieval gold** Early Florentine tempera artists made lavish use of gilding, giving their paintings a magical, luminous quality. *Miracle of the Dragons from the Altarpiece of St. Matthew*, Andrea and Jacopo di Cione, c1367–70

▼ **Metallic acrylics** Artists today still use metals for decorative effect. Metallic pigments, acrylic, aluminum, brass, and collage were used to create this homage to the stars. *Lunetta con Costellazioni*, Lucio del Pezzo, c1965



Brushstrokes and texture

A sculpture is tactile as well as three dimensional—touching it can be as much a part of experiencing it as looking at it. Paintings have texture, too: smooth and flat, or ridged and lumpy depending on how thickly the paint has been applied. The paint finish may be matte or glossy; varnish makes it shiny.

The artist's hand

Fashions change as to whether artists want you to see their brushstrokes in their work. During some periods they have favored a high degree of finish, in which the artist's technique conceals all traces of the working process. The finish, combined with skillful use of perspective and tone, helps to create a realistic illusion of the physical world. At other times, artists have taken great pride in revealing the craftsmanship in their work.

Invisible traces

Some media are more forgiving than others. Because egg tempera dried so fast, artists had to paint with tiny brushstrokes, just visible to the naked eye. Oil paint enabled them to conceal their brushwork in a fluid blend on the canvas or panel. Invisible brushwork reached the peak of its popularity in 19th-century traditional works, and was partly responsible for provoking later artists to daub—and in the 20th century even pour—paint on. A counter-reaction to this has led to some artists creating ultra-smooth surfaces, helped by the new acrylics.

► **Sculptural realism** Tura was working when oil painting first became popular and he used both oils and egg tempera in this work. Blended brushstrokes with crisp highlights convey stiff folds of cloth, as if the figure were a sculpture. *St. Jerome, Cosimo Tura, c1470*



▲ ▼ **Smooth flesh** Cabanel was a leading light of French Academic painting. His slick, highly finished handling of oil paints made flesh in his paintings look completely smooth—the acceptable face of female nudity posing as high art on the pretext of retelling a classical myth. *Birth of Venus, Alexandre Cabanel, 1863*



Visible brushstrokes

Oil paints give artists the choice of whether to hide or show their brushstrokes. Some Old Masters, including Velázquez and Rembrandt, made visible brushmarks. The invention of tube paints in the late 19th century made it easier for artists to use thick, undiluted paint. If you look at a painting from the side, you can see how thick the paint is.



▲ ► **Slabs of paint** Van Gogh is known for working at feverish speed, but his brushstrokes are actually laid down carefully and precisely. They sit side by side in series of lines and differently colored dots, with the canvas visible in between. *The Garden at Arles, Vincent van Gogh, 1888*



◀ ◀ **Thick impasto** Kossoff's work is characterized by craggy impasto—thickly applied opaque paint—and heavy black outlines. *Portrait of Father No. 3, Leon Kossoff, 1972*



BROKEN BRUSHWORK

One reason why the French Impressionists were criticized by contemporary critics was because their work looked unfinished and slapdash—you could see their brushstrokes. This apparent sketchiness was a deliberate attempt to convey the flickering effects of light reflected from moving water, clouds, or plants.



▲ ► **Conveying movement** Renoir blurred one shape into another, using his long brushes (right) to create feathery strokes of varying size and direction. The rapid brushstrokes convey the impression of scudding clouds and windblown grass. *The Gust of Wind, Pierre-Auguste Renoir, c1872*



Surface appearance

How a painter applies paint or a sculptor finishes the surface of a sculpture gives the work the characteristic imprint of the artist. Both paintings and sculptures can look smoothly polished, or textured and pitted. An artist may adopt a spontaneous, fluid style that leaves you free to supply the missing information or provide every detail for you—either approach can look realistic.

Identifying the artist

Each artist's brushstrokes are unique, just as handwriting is. When experts want to determine whether a painting is genuinely by the artist to whom it is attributed, or which parts of a work were by an Old Master, such as Rubens, and which parts were delegated to his workshop, they analyze the brushstrokes. Even when two artists work in the same period and on the same subject matter, as in these paintings of Venice, their personal style is recognizably different.



▲ ▼ **Fluid brushwork** Guardi also painted scenes of Venice but in a much looser style than Canaletto. His canal waves do not conform to a set pattern, but vary with the changing weather conditions. *Rio dei Mendicanti, Venice, Francesco Guardi, c1750*

▲ ▶ **Linear precision** Long before postcards, Canaletto painted scenes of Venice for people on the Grand Tour. He painted waves with a characteristic curved white line. *Bridge of Sighs, Venice, Canaletto, c1740*



Sculpture

Both wooden and marble sculptures were often painted until the Renaissance, though the pigment seldom survived the centuries. Later sculptors preferred to let the nature of the material, such as the grain of the wood or the smooth coldness of marble, show. Metal sculptures can be left to patinate (develop a surface film). As natural patination can take centuries, sculptors since the Renaissance have added acid to speed up the process of creating a mellow surface appearance.

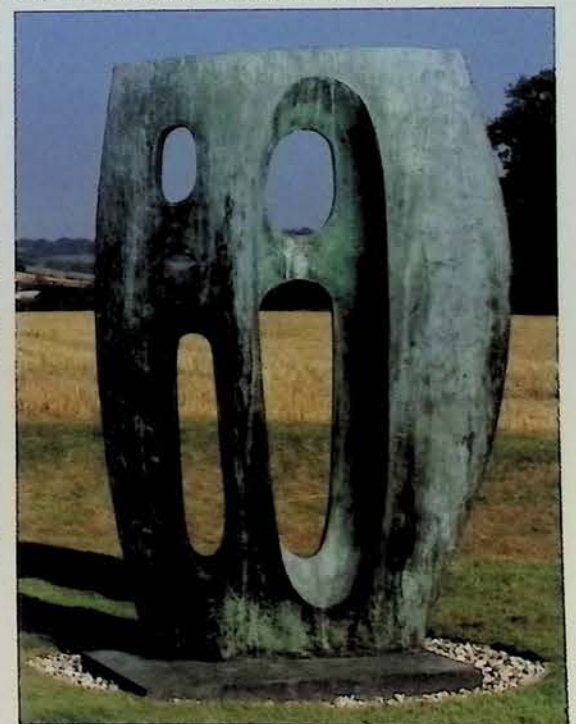


◀ ▲ **Smooth surface** The Italian sculptor Canova worked mainly in marble. The smooth white finish is typical of neoclassical sculptures, modeled on classical examples in the mistaken belief that they were not painted. *Cupid and Psyche, Antonio Canova, 1783–93*



▲ **Rough and lumpy** The Swiss sculptor Alberto Giacometti works on a clay model for one of the many elongated figures he made in the mid-20th century. The roughly kneaded surface accentuates the edginess and fragility of the spindly figure.

▼ **Bronze with patina** Bronzes usually develop a patina of green oxidation. The weathered-looking surface incrustation forms an integral feature of this outdoor sculpture. *Sea Form (Atlantic), Barbara Hepworth, 1964*



Chinese brushstrokes

In the early 6th century, Chinese scholar Xie He set out six principles of painting, the second of which refers to brushwork. Brushstrokes, according to him, are the "bones" of the painting and give it its structure. Through each brushmark, the painter should express the spirit that flows through everything in the universe. The vitality of the brushwork conveys the energy of life and breath. The way the Chinese use brushes is often described as calligraphic because it is like handwriting—and Chinese works of art frequently combine image and writing.



▲ **Confident brushwork** Sparing use of line is fleshed out with tonal washes. The inscription balances the composition. *Figure painting, Li Keran, c1950*

◀ **Brush and ink** Chinese brushes tend to be larger than European ones and have a fine tip. Ink traditionally comes as an inkstick, ground on an inkstone with a little water.

When four boys were playing in the woods at Lascaux in France in 1940, they little expected to come across cave paintings of bulls dating back to about 15,000 BCE. Some cave paintings, found in Australia, Africa, and Europe, date back even earlier. While scholars can find out how and roughly when the earliest art was made, they will probably never be sure why. The same goes for much Paleolithic, Neolithic, and Bronze Age art.

Prehistory



The Ancient Near East saw the rise of the first cities and city-states in Mesopotamia (modern-day Iraq). Temple complexes combined worship and business, and in these places archaeologists have discovered cuneiform tablets showing the earliest system of writing as well as figure sculptures whose size attests to their importance.

Fascination with Ancient Egypt has rarely dimmed since Napoleon's army went up the Nile in 1798. The discovery of more than 100 mummies in 2000 fueled yet more interest in the era. Similarly, Ancient Greece and Rome, from the

Minoan civilization on Crete—home of the legendary Minotaur, through the Athenian democracy in the 5th century BCE—and on to the wall paintings discovered in Pompeii and Herculaneum, have been a continual cultural influence. Islam, Buddhism, and Hinduism inspired art in the East, while the Maya developed the pre-eminent civilization in pre-Columbian America and, in Western art, Christian iconography gathered strength.

to 1400 CE

0 500 1000 1200 1400

BYZANTINE 330–1453

CAROLINGIAN c750–c900

OTTONIAN c900–c1050

ROMANESQUE c1000–c1200

HELLENISTIC c323 BCE–27 BCE

GOTHIC 1140–1500

INTERNATIONAL GOTHIC c1375

NAZCA 400BCE–600CE

VIKING c800–1050

MAYA 300CE–900

MOCHE 0CE–c600

KHMER EMPIRE 802–1431

TEOTIHUACAN c50CE–600s

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Ross King is the award-winning author of best-selling books on Italian and French art and history, including *Brunelleschi's Dome*, *Michelangelo and the Pope's Ceiling*, and *Mad Enchantment*. Born and raised in Canada, he has lived for many years in England, near Oxford.



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