

# *art 4 visualizers*

## ***Tutorial***

***Information Visualization 2011 (IV'11)***

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# Art 4 Visualizers

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pace digital gallery



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## General Tutorial Structure

### Morning:

Overview of art as a communication medium  
with examples from National Gallery

### Afternoon:

Practice at National Gallery, Trafalgar Square

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## Morning

1. Brief Historical Overview of Art as a Communication Medium
2. Examples of Art as Communication Medium
  - Expressing Relationships between Text and Images
3. Elements and Principles of Visual Art
4. How to Analyze Art

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## Tutorial Sources

- *My Website:*  
<http://csis.pace.edu/~marchese/>
- *My Tutorial Page:*  
<http://csis.pace.edu/~marchese/art4viz/tut1.htm>
- *My Text/Image Resources Page:*  
<http://csis.pace.edu/~marchese/TextImage/TextImage.htm>

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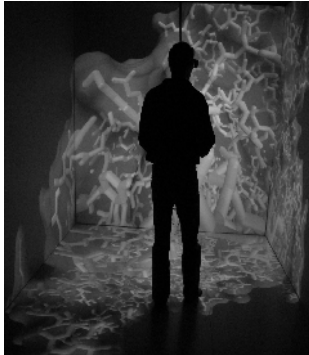
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*What information is communicated?*

*How is information communicated?*

*How much information is communicated?*

*How well is information communicated?*

CAVE, Center for High Performance Computing and Visualization (HPCV)  
University of Groningen

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*What information is communicated?*

*How is information communicated?*

*How much information is communicated?*

*How well is information communicated?*

*Vase of Flowers*, 1689  
Rachel Ruysch, San Diego Museum of Art

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What information is communicated?  
 How is information communicated?  
 How much information is communicated?  
 How well is information communicated?

A. Gindulyte, et al. 2006. "The transition state for formation of the peptide bond in the ribosome." *PNAS* 103, 36, pp. 13327-13332.

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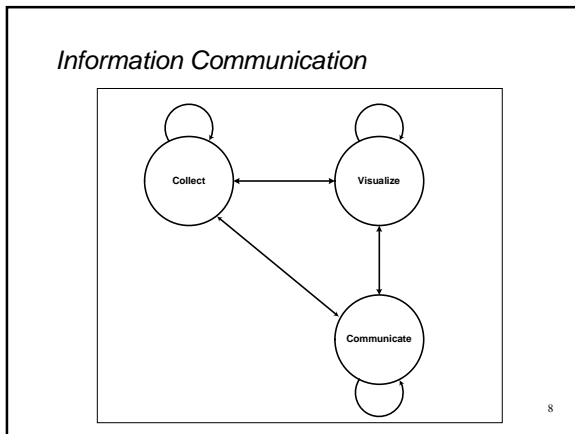
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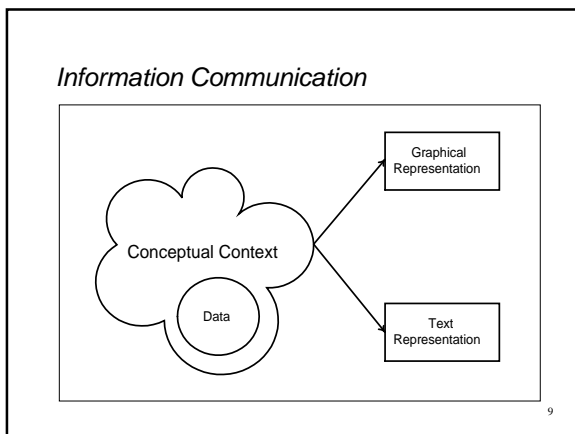
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## Information Communication

### Text-rich Media

- Precise text
- Images used as illustrations
- Narrative!
- Author of text sets communication context

### Visualization Systems

- Dynamic imagery
- Text used as annotations
- Narrative?
- Possible open communication and collaboration

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## Concepts / Definitions

- **Art:** a form of human **expression** that involves the realization of ideas and the creation of meaning through the production of images, objects, experiences, or performance.
- **Expression:** an act, process, or instance of representing in a medium
- **Communication:** a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior
- *Expression ≠ Communication*
- **Assume:** Expression in art is communication

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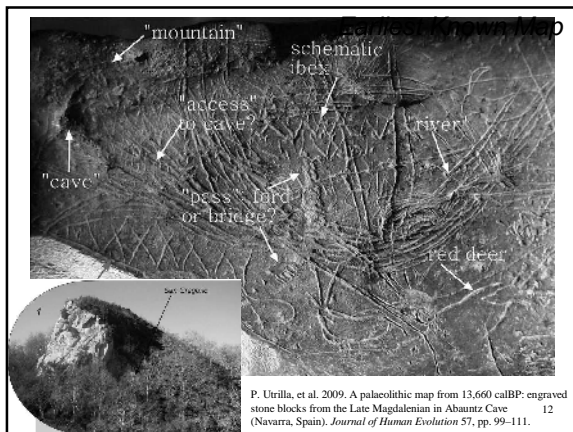
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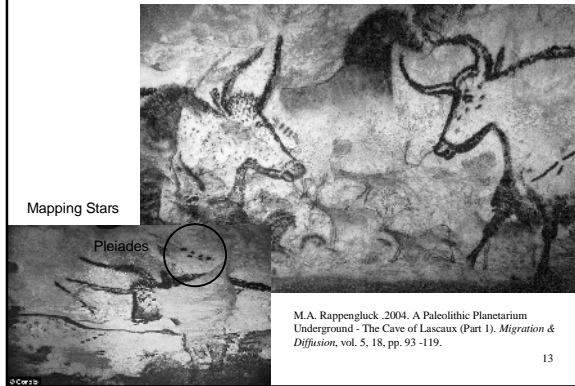
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### Early Visual Documentation & Communication



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### Time, Space, and Virtual Worlds

Font-de-Gaume, France.

- *Main hall* - space that can be lit by the placement of lamps at three locations.
- *First light* - hind appears in black and red.
- *Second light* - hind is replaced with a black bison.
- *Third light* - bison transformed into a mammoth.

Edward Wachtel, "The First Picture Show: Cinematic Aspects of Cave Art," *Leonardo*, Vol. 26, No. 2 (1993), pp. 135-140.

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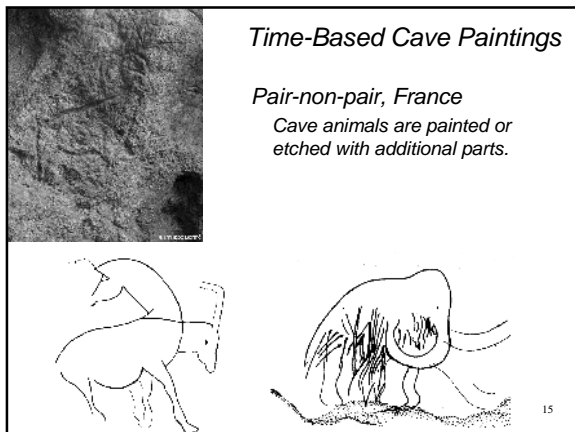
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*Visual effects may explain how our hunter ancestors used the caves*

- Wild animals well camouflaged - often invisible.
- Discovering quarry based on surprise with quick response essential.
- Caves used for ritual hunts or initiation rites for young hunters.
- Youths required to respond in an appropriate fashion.
- Ability to recognize and react quickly to the wild game could be tested and rewarded.
- Cave walls upgraded when new hunting scenarios were encountered.

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*Geometry and Representation*

*Geometry: means measure of earth*

- Used:
  - as foundation of visual representation
  - first by ancient Egyptians
  - to reestablish social order after Nile river yearly overflowed its banks eradicating land boundaries.
- Study of spatial order by measure and relationship of form
- Philosophical language used for reasoning - Plato
- Rediscovered by Western Europe during Crusades.
- Foundation: Euclid's Elements
  - translated from Greek & Arabic to Latin late 12th C.
  - printed in Venice in 1482.

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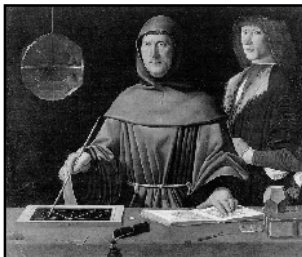
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Fra Luca Pacioli, Jacopo de' Barbari

Fra Luca Pacioli (1445-1517), Franciscan monk, teacher of mathematics and theory.

Student: Duke Guidobaldo da Montefeltro

*Table of the tools of Renaissance mathematician's profession:*

- chalk and erasing sponge
- goniometric contact gauge
- pair of dividers
- copy of Euclid's Elements (open by a drawing slate where a problem from book XIII has been drawn).

*Small dodecahedron fashioned from wood and a rhombicuboctahedron constructed out of glass.*

*Painting's significance:*

- Represents ongoing dialogue between art and mathematics
- Pacioli's used the contemporary visual arts for popularization of mathematical science.
- Pacioli's book *De divina proportione*, 1509, disseminated his beliefs in Euclid's laws as a foundation for understanding the laws of the Universe as well as the artistic expression of Nature's forms.

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## Reorienting Visual Thought Before Pacioli

Onset of the 15<sup>th</sup> C.

- *Artists had already become facile observers of nature.*
  - Early 14<sup>th</sup> C artists had accumulated a growing set of prescriptions for rendering spatial relationships and portraying light and shadow.
- *Artists of the fourteen hundreds - true art meant imitation of nature.*
  - Imitation - the creation of figures that appeared to breathe in virtual spaces sensed as real.
- *Artists required to understand nature through its abstraction to the Platonic geometric ideals.*
  - Required a rationalized theory of light, space, and form founded on mathematics.
- *Foundation: confluence of two streams of Renaissance thought about nature:*
  - Theoretical: philosophical tradition following the ancient Greeks such as Aristotle, Plato, Euclid, and Ptolemy;
  - Practical: experimental tradition carried forth by the artisans which included artists and engineers.

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## 15th Century Florence

- *Fragmented visual space of Medieval art becomes the single plane viewer centric visual space*
  - dominates Western art for the next five centuries until cubism in the first quarter of the twentieth century.
- *(Re)invention of visual perspective*
  - Filippo Brunelleschi, artist and architectural engineer (1377-1446).
- *Application of optical theory to painting*
  - the artist's/viewer's eye position defined the image's center point and horizon line.
- *Euclid's geometry endowed Brunelleschi's empirical methods with a firm mathematical underpinning*

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Giotto, *The Crucifixion* fresco (1304-1306)



Masaccio, *Trinity* fresco (1426)

Brunelleschi's friend Masaccio exploited his friend's procedures in his work on the Trinity fresco in 1426, the first perspective demonstration directly influenced by Brunelleschi.

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**Impact on Renaissance Science and Art:**

- *Geometry became language to record and interpret nature.*
- *Artificial perspective methods came under geometric control.*



*The Flagellation of Christ, Piero della Francesca, (c. 1415-1492)*

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Albrecht Durer, 1525, woodcut

- **Seminal treatise: On Painting (De Pictura, 1435)**
  - *Brunelleschi's discovery was a scientific principle of art and was recast into the language of Medieval optics by Leon Battista Alberti*
- **Perspective - a system for recording the intersections of light rays on a plane as they proceeded in a pyramidal pattern from object to eye.**
- **The Grid became the frame-of-reference for rationalized observation and systematic decomposition of natural objects**
- **Naturalness becomes endowed with a scientific foundation.**
- **Any painting becomes a rational image based on the universal laws of geometry, painted by an individual who became, in effect, the first modern scientist.**

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**Realism vs. Idealized (Stylized) Iconography**



Giovanni Bellini, Portrait of the doge Leonardo Loredan, 1501-4, London, National Gallery



Giovanni Bellini, Giobbe Alterpiece, Madonna with Child, 1487, Galleria dell'Accademia, Venice

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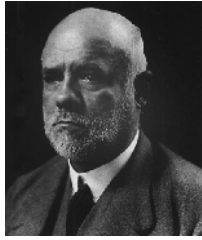
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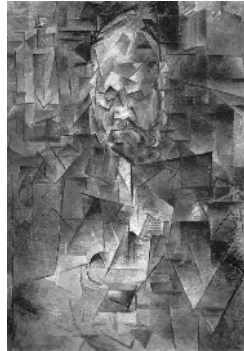
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Ambroise Vollard, French Art Dealer (1866 - 1939)



Cubist Portrait of Vollard, Pablo Picasso, 1910 25

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*Text, Image, Story*

1. **Story**
2. Image with Text
3. Image from Text
4. Charting Stories
5. What is the Story?
6. Information Arts

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*1. Story*

- 1659, Robert Boyle constructed first English air pump.
- 1768, Joseph Wright of Derby - *An Experiment on a Bird in the Air Pump*.
  - Experiment tells a story of scientific popularization and scientific practice.
- *During Enlightenment*
  - wonders of science received much popular interest.
  - disseminated to the public by traveling natural philosophers
  - lectures and demonstrations on optics, pneumatics, astronomy, and alchemy.

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An Experiment on a Bird in the Air Pump, 1768, Joseph Wright of Derby, the National Gallery, London 28

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### *An Experiment on a Bird in the Air Pump*

*Captures the critical moment in the air pump demonstration.*

- *Live animal (e.g. mouse, bird, frog) placed inside glass receiver. (Wright uses cockatoo)*
- *Air evacuated - bird slumps in the receiver.*
- *The lecturer:*
  - left hand on stopcock, ready to infuse the bulb with air.
  - right hand gestures to us.
  - We are engaged by his penetrating stare, drawn into the scene where the outcome has been left uncertain.
- *Will the bird live or die?*

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### *An Experiment on a Bird in the Air Pump*

*What are we to make of such a painting?*

- *Documentation of a scientific demonstration*
- *Transmits society's response to the sciences:*
  - curiosity, fascination, wonder, awe, and fear
- *Image encompasses all the ages of humankind.*
  - Middle age man attempts to comfort two young girls fearing the bird's demise.
  - Objectively detached adult has taken out a watch to keep passage of time.
  - Pair of young lovers is more self-engaged than with the life and death situation at hand.
  - Old man stares at a water-filled jar containing a skull, perhaps contemplating the finality of death.

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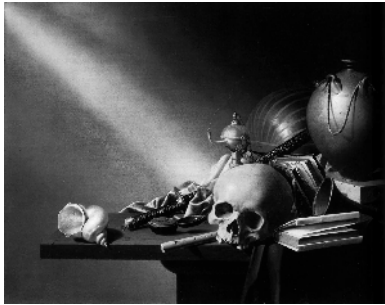
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*Still Life: An Allegory of the Vanities of Human Life*, c. 1640  
Harmen Evertsz. Steenwyck, Oil on panel, 39 x 51 cm  
National Gallery, London

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### Vanitas Painting

- 'Vanitas', from Old Testament book of Ecclesiastes (1:2): 'Vanitas vanitatum... et omnia vanitas', translated 'Vanity of vanities, all is vanity'.
- Vanitas paintings originated with Dutch in mid-16C
- Symbols:
  - Books - human knowledge
  - Musical instruments (a recorder, part of a shawm, a lute) - the pleasures of the senses.
  - Japanese sword and the shell, collectors' rarities - wealth.
  - Watch and expiring lamp (candle) - transience and frailty of human life.
  - Skull - death.

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*Vase of Flowers*, Rachel Ruysch, 1689,  
San Diego Museum of Art

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### Vase of Flowers – Vanitas Painting

- *Flowers not freshly cut - buds, full bloom, withered, dying, or dead.*
  - Symbols of transience and death clearly communicated.
- *Symbols of life and renewal (or resurrection).*
  - A butterfly emerges from a pupa.
  - A dragonfly sips from a flower, soon to take flight. It will carry the flower's pollen to yet another flower, thereby continuing the birth-death cycle.
- *Level's of communication:*
  - Painterly accurate representation of the flora - botanical illustration.
  - Iconography of vanitas painting - engages viewer at a psychological or philosophical level.
  - 17C Dutch cultural impulse for mapping - a visual representation should faithfully record the phenomena observed in the real world.

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Vesuvius from Portici, Joseph Wright of Derby, Huntington Library in Pasadena, CA

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### Wright and “Mapping Instinct”

- *Painted landscapes and industrial scenes*
  - documented changing society of British Midlands brought about by the Industrial Revolution.
- *His Imagery:*
  - images are accurate renderings
  - they are theater
- *Example: landscape paintings from around Naples.*
- *Visited Italy*
  - studied Renaissance masters & absorbs Italian light and landscape.
- *Some Sketches and paintings - can fix precise position and vista.*
  - All spatial measures and relationships of all landmarks maintain their representational integrity.
- *Others - rearranges and enhances scene for visual drama*
  - Pictures of Mount Vesuvius show volcano in full eruption - an eruption he did not observe.
  - Brilliant yellow-white jets of lava shoot skyward from the volcano's cone, sculpting the landscape and voluminous clouds of smoke and ash.

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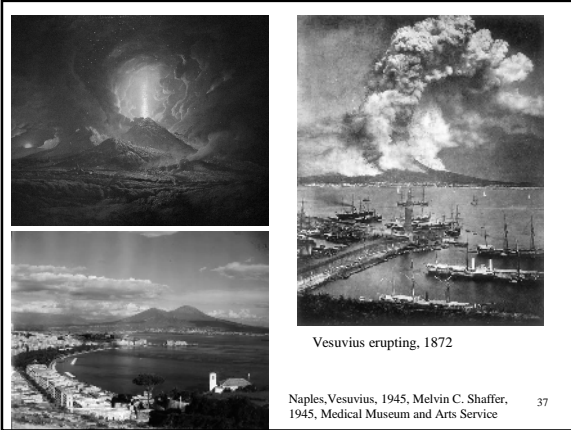
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Vesuvius erupting, 1872

Naples, Vesuvius, 1945, Melvin C. Shaffer, 1945, Medical Museum and Arts Service 37

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- *Wright's dramatic portrayal of Vesuvius's eruption and his Experiment make for great theater.*
- *But do they make for great narrative truth?*
- *A narrative is a solution to the problem of how to translate knowing into telling.*
  - In literature - narrative is text that is structured by its telling.
  - The organization of text that creates a narrative
  - Scientific lectures are narrative
- *Holds true for pictorial narrative too. All pictorial narrative must tell a story!*

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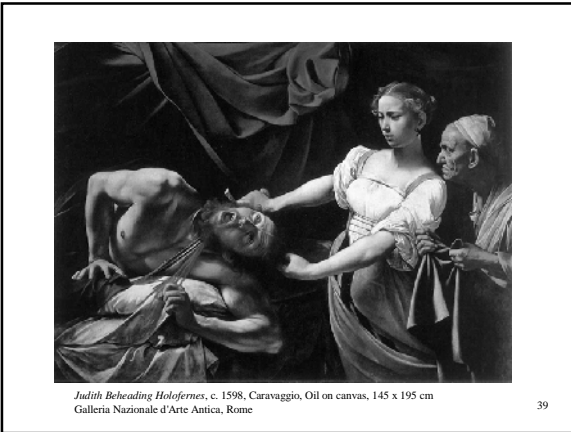
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Judith Beheading Holofernes, c. 1598, Caravaggio, Oil on canvas, 145 x 195 cm  
Galleria Nazionale d'Arte Antica, Rome

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*Judith Beheading Holofernes*

- 17thC Roman art critic Bellori criticized Caravaggio's work for its lack of narrative action.
- Caravaggio interested in depiction over story-telling.
- Thrust action of the painting into space of the viewer.
- Focus on the figures to the exclusion of a setting.
  - Story of Judith takes place in a tent.
  - Caravaggio crops this painting so tightly that it is impossible to see the environment around the figures.
  - Instead Caravaggio focuses on the realism of Holofernes brutal murder.

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*Judith Beheading Holofernes*

- If the purpose of this painting was to communicate the narrative story of Judith and Holofernes, then it would be a failure.
- Instead Carravaggio depicts the violent beheading of a man by a young woman.
- Carravaggio's work is a failure by standard Italian Renaissance expectations of narration.
- It is a brilliant success though, if the goal of the work is to depict a kind of realism.

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An Experiment on a Bird in the Air Pump, 1768, Joseph Wright of Derby, the National Gallery, London 42

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### *What about Wright's Experiment?*

- *Is it narrative?*
- *Has all the trappings of narrative.*
  - Demonstration takes place on a partly cloudy night.
  - Birdcage held aloft by the young man shows the beginning and possible end of the story.
  - Action has progressed to the final moment where the bird's fate has been left in doubt.
- *Instead of a narrative with an ending - it is a cliffhanger.*

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### *Continuous Narrative*

- *Type of narrative that illustrates multiple scenes of a narrative within a single frame.*
- *Multiple actions and scenes are portrayed in a single visual field without any dividers.*
- *The sequence of events within the narrative is defined through the reuse of the main character or characters.*
- *It emphasizes the change in movement and state of the repeating characters as indicators of scene or phase changes in the narrative.*

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*The Feast of Herod and the Beheading of Saint John the Baptist, 1461-1462, Benozzo Gozzoli*

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Examples:  
Chinese Hand Scroll

Trajan's Column, Rome  
(Replica at Victoria & Albert  
Museum, London)

Bayeux Tapestry



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### Sequential Narrative

- Similar to continuous narrative - one major difference.
- In a sequential narrative each scene and action is represented within its own frame
- Examples:
  - Medieval Stained Glass
  - Comic books

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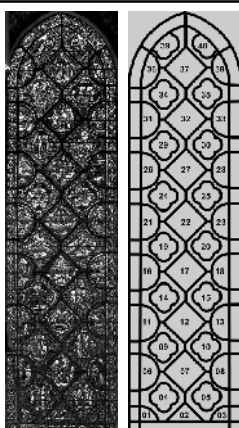
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Chartres Cathedral - the Medieval Stained  
Glass: Bay 47 - Noah and the flood

Height 8.13m, width 2.21m. Made c.1205-15

Stained glass read from bottom to top.

Here, diamonds contain main plot line

From:  
<http://www.medievalart.org.uk/index.html>

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God instructs Noah to build an ark



Noah and one of his sons constructing the Ark



The Ark floating on the rising waters



Animals leaving the Ark

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## 2. Image with Text

*De Re Metallica*, Georgius Agricola, 1556

- *Comprehensive collection of mining and metallurgical practices covering mine design and excavation, the construction and use of mining and smelting equipment, and methods for smelting ore.*
- *Wanted to make certain that his prescriptions and recipes would be clearly communicated, so he commissioned illustrators to create woodcuts to visually augment the text.*

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## *De Re Metallica*

- *Illustrations remarkably modern in form*
- *Many display cut-away views of mines, showing their inner workings including men and machinery*
- *Other illustrations contain exploded or disassembled views of machinery in the same context as the assembled working models*

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Process of smelting bismuth

*De Re Metallica*, 1556, Georgius Agricola

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### 3. Image from Text

*"The Great Figure, 1921, William Carlos Williams*

- *Hot July day the poet William Carlos Williams neared th home of the painter Marsden Hartley.*
- *He was aroused by the clanging and roar of a fire engine speeding past the end of the street.*
- *Turning around he saw a golden number 5 flash by on the red truck.*
- *Image so sudden and so strong he i took out a piece of paper and jotted down a poem about the experience.*
- *The poem captures an instant in time.*

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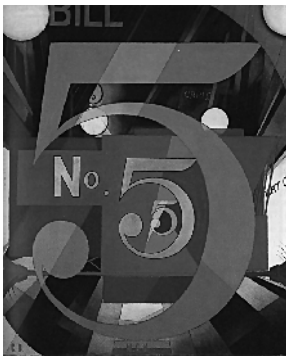
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*The Figure 5 in Gold*, 1928, Charles Demuth (1883-1935)  
Alfred Stieglitz Collection, Metropolitan Museum of Art

Among the rain  
and lights  
I saw the Figure 5  
in gold  
on a red  
fire truck  
moving  
tense  
unheeded  
to gong clangs  
siren howls  
and wheels rumbling  
through the dark city.

*The Great Figure*,  
William Carlos Williams (1883-1963)  
*Sour Grapes: A Book of Poems*, Four  
Seas Company, Boston, 1921

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### "The Great Figure"

- One of his most effective examples of poem painting
  - a poem is a picture created by putting words, the pigment, to paper.
- Williams - a visual poet - created poems for the eye.
- He translated the image in his mind into the words on the page to evoke the same picture in the reader's mind.
- To Williams the mental image which the picture evokes should be identical to the mental image the poem evokes.
- Charles Demuth's 1928 painting *I Saw the Figure 5 in Gold*. was from the poem.

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### 4. Charting Stories

*The Life and Opinions of Tristram Shandy, Gentleman, Laurence Sterne, 1759*

- One of the landmarks of English literature.
- Published in installments from 1759-67
- Treats the book form as something to be fooled around with:
  - a full page of black ink for a death
  - rows of asterisks and dashes
  - blank pages and lines
- No plot to speak of - instead a series of events and thoughts narrated by Tristram concerning his absurd family and acquaintances
- NOTE: uses line charts to record his emotional state during the course of his narrative.

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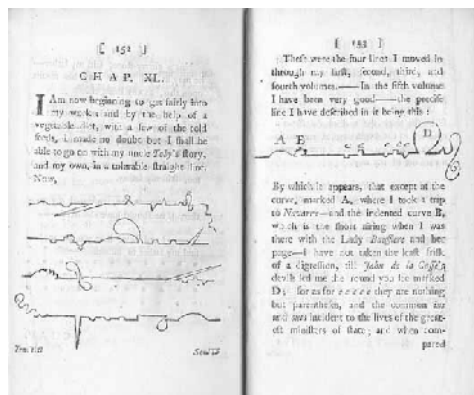
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**Information Visualization: text to image**

*Transformations* ... Cinderella and the prince  
Anne Sexton, 1971 lived, they say, happily ever after,  
like two dolls in a museum case  
never bothered by dust,  
never arguing over the timing of an egg,  
never telling the same story twice,  
never getting middle-aged spread,  
their darling smiles pasted on for eternity.  
Regular Bobbsey Twins.  
That story.

Transformed Grimm's  
fairy tales into  
contemporary versions  
of morality plays

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**Visualization**

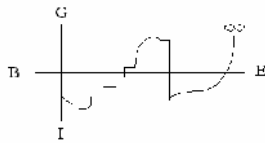


Diagram of Cinderella  
Forward to Transformations  
by Kurt Vonnegut

"G" was good fortune.  
"I" was ill fortune.  
"B" was beginning.  
"E" was end.

Cinderella was low at the  
start. She sank even lower  
when her rotten stepsisters  
went to the party and she  
stayed home. ...

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**5. What is the Story?**

**Rachel Whiteread's House (1993)**

- Art which conveyed what it was like to be inside the walls of a house looking into the space of each room
- Obtained permission in 1993 to use a house that was scheduled for demolition in London's East End
- Cast entire house in concrete.

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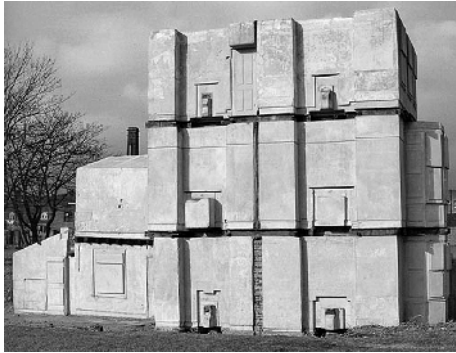
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House, 1993, Rachel Whiteread

61

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### *Response to House*

- *Immediate passionate response*
  - far more intense than she had ever imagined.
- *Some thought House to be a monument to homelessness*
- *Original house was built in the 19thC*
  - Some saw House to be a sign of nostalgia.
- *Feminists saw House as a sign of conflict within the home.*
- *Others treated House as if it were real:*
  - Milk bottles were left at its door.
  - One man addressed letters to this house that was no longer a house.

62

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### *Text, Image, Story*

1. Story
2. Image with Text
3. Image from Text
4. Charting Stories
5. What is the Story?
6. **Information Arts**

63

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*Vietnam Veterans Memorial (1982)*

*Maya Lin*

*"I wanted the names in chronological order because to honor the living as well as the dead it had to be a sequence in time."*

*"I thought about what death is, what a loss is. A sharp pain that lessens with time, but can never quite heal over. A scar. The idea occurred to me there on the site. Take a knife and cut open the earth, and with time the grass would heal it. As if you cut open the rock and polished it."*



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*Vietnam Veterans Memorial (1982)*



Black granite, each wall: 246 feet long, 10 1/2 feet high

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*Stock Market Art*

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## G7 Stock Puppets

Jim Mason

[www.stockpuppets.com](http://www.stockpuppets.com)

- Internet-driven kinetic installation that tracks the global stock markets with 7 marionette puppets.
- Puppets rise and fall with the movements of the G-7 market indices.
- Each Puppet:
  - 8 foot tall fiberglass mannequins in gray-pinstriped suits.
  - Monitor for a head that streams market data.
  - Movement cues face animation of a finance minister - the face morphing in relation to the direction of market movement.
  - Puppet elevated and articulated by cables extending down from pulleys supported 25' overhead on a towers.
- Ambient sound of buy and sell orders, bells and gavels

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G7 Stock Puppets



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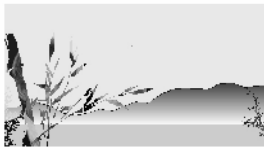
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## eBay Landscape

Carlo Zanni

<http://www.zanni.org/ebaylandscape/ebayinfo.html>



"e-bay landscape" is an online environment based on concepts such as -contemporary identity- (IP presence) and -data lanscape- (ebay stock quote) that, even if invisible, they radically influence our daily life. - Zanni

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- *Animated night sky that is also a live representation of the world's stock markets, with each star representing a traded company.*
- *Fed by massive streams of live financial information, the stars glimmer and pulse, immediately flickering brighter whenever their stock is traded anywhere in the world.*
- *The stars slowly move across the sky, clustering together or drifting apart in response to the shifting affinities of their respective companies, growing or shrinking as the company's fortunes change.*
- *Digital creatures, a form of artificial life, inhabit this world, feeding on the light released by the stars, breeding, dying and slowly evolving – while trying to learn to live in this strange artificial ecology into which they've been born.*
- *Originally designed to be installed in a restaurant next door to the London Stock Exchange.*
  - *Traders would be able to eat underneath the dome – that it would be a kind of ironic "Mount Olympus" from which they would be able to look down and oversee their creation during their lunch time.*

73

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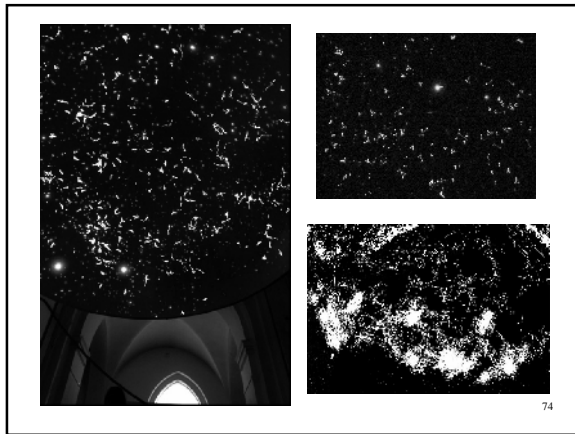
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*High Altitude*  
 Michael Najjar  
<http://www.michaelnajjar.com/>



NASDAQ – 1980 to 2009  
 Visualization of Global Stock Markets over past 20 yrs

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BOVESPA 1993 - 2009

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Dow Jones 1980 - 2009

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*Cartographic Art*

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Jasper Johns, "Map," 1961



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Kim Jones, Blue Shirt with Horns, 2005, acrylic, ink, wood and fabric



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Charbel Ackermann, "The Axis of Evil Mostly in the Dark," from the series, "The New Geometry," 2005



81

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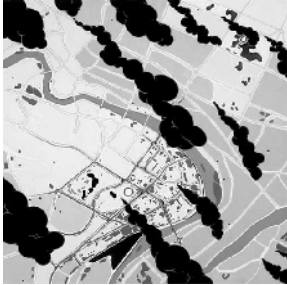
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Sarah Trigg, *The International Zone formerly known as the Green Zone*, 2005, gouache on paper, 12"x 12"



82

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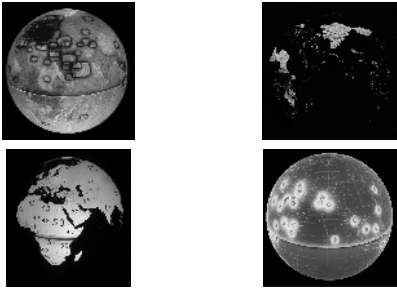
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Ingo Günther, *Worldprocessor*



<http://www.worldprocessor.com/>

83

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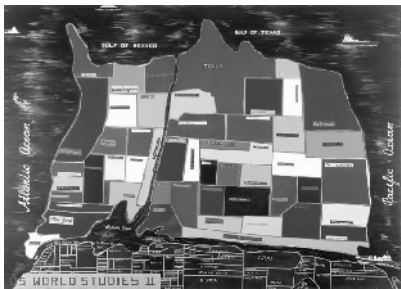
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Jules de Balincourt, *U.S World Studies II*, 2005



84

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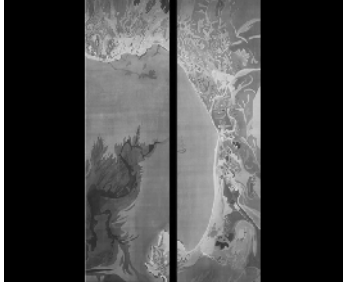
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Mary Edna Fraser, "Monterey Canyon" CA, batik on silk



85

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PETER CLARK, Global Affair, 2007



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Corriette Schoenaerts, Europe, 2005



87

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MARY ARMSTRONG, Mapping the Venetian Lagoon, Series 2, #7, 2007



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Carl Cheng, Walk on L.A., 1988



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San Francisco Emotion Map  
Christian Nold, 2007



- Mobilizes people to record their feelings as they wander through San Francisco's Mission District. (Google Earth + Nold's Bio-mapping tool)
- Collective attempt at creating an emotional portrait of a neighborhood, and envisions new tools that allow people to share and interpret their own bio data.

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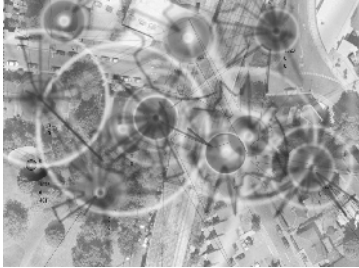
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*Sensity Brixton London*  
Stanza, (2004-2009)



*Maps transient ambient sensations surrounding Stanza's home captured by his sensor network.*

*Sensity expresses the collective pulse of its environment, rendering its emergent emotional state.*

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*Text Art*

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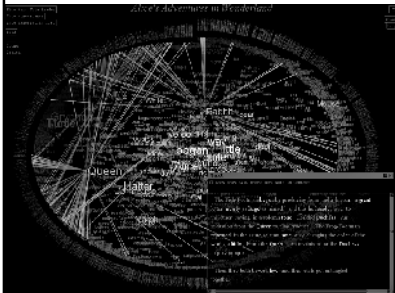
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*Textarc*  
W. Bradford Paley



*Textarc mines classic literature found in digital places to reconfigure them into graphical renderings.*

*Textarc's luminous concentric spirals of these texts encourage the reader/viewer to move dynamically through the textural layers to make new associations*

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## Grafik Dynamo

Kate Armstrong & Michael Tippett



Grafik Dynamo continuously trawls through both web images and text to render narrative comic strip style, employing annotation to create meaning from a random combination of imagery and text bubbles.

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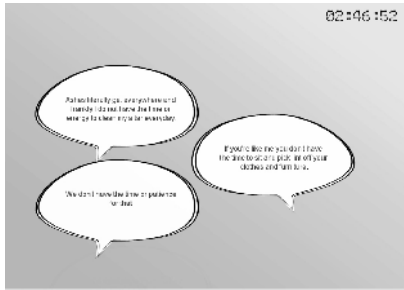
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## No Time Machine

Daniel C. Howe and Aya Karpinska



Uses text mining algorithm to retrieve from the Web expressions of angst that communicate our collective sense of time compression.

Our minds make meaning from exchanges that float in speech bubbles amid a glowing yellow space.

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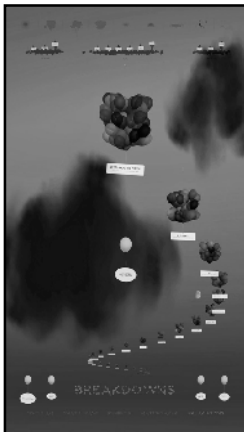
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## I want you to want me

Jonathan Harris & Sep Kamvar



- Explores the search for love and self in the world of online dating
- System searches online dating sites for certain phrases, collects them and puts in a database.
- These phrases, taken out of context, provide partial glimpses into people's private lives.



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## Elements and Principles of Visual Art

### ELEMENTS

Line  
Shape/Form  
Space  
Value  
Texture  
Color

### PRINCIPLES

Emphasis / Focal Point  
Balance  
Unity  
Contrast  
Movement / Rhythm  
Pattern / Repetition  
Symmetry / Asymmetry

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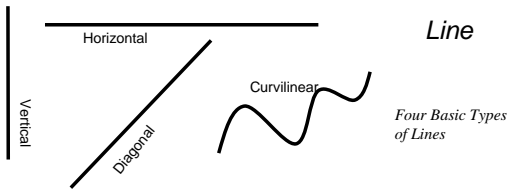
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- A mark made by a moving point.
- Has greater length than width.
- Directs the eye – horizontal, vertical, diagonal, curvy, zig-zag, etc.
- Can be actual obvious lines or the borders or edges of shapes.

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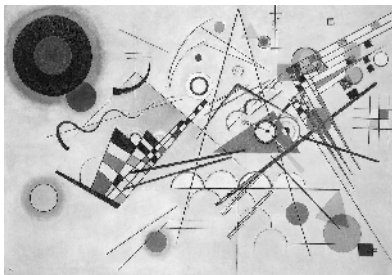
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### *Explicit Line*



*Composition VIII*, 1923, Wassily Kandinsky, The Solomon R. Guggenheim Museum, New York

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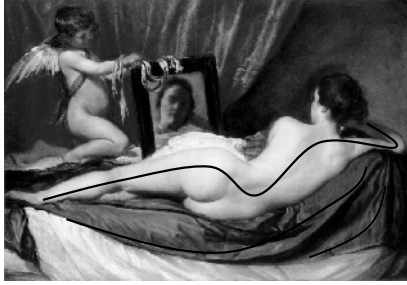
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### Implied Line



Venus at Her Mirror, Diego Velázquez, c. 1644-48, Oil, 122.5 x 177 cm  
National Gallery, London

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### Contour Line

- Contour line is the line that distinguishes the outer edge of the object within the art work.



The Mourning of Christ, Giotto,  
c. 1305, Fresco  
Cappella dell'Arena, Padua

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### Shape / Form

- A contained area.
- Can be GEOMETRIC (man-made) ex. Square, triangle, circle, etc.
- Can be ORGANIC (natural) ex. Leaves, humans, puddles, etc.
- Shapes are 2-Dimensional and flat. (circle)
- Forms are 3-Dimensional with height, width and depth. (sphere)
- Used to create a sense of space and substance.

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## Space

*The area used or unused in a composition.*

- **Open and Closed**
  - Open: A viewer's eyes are led off the canvas
  - Closed: A viewer's eyes are kept within the center of the canvas - all the characters and action are within the edges of the frame.
- **Positive and Negative**
  - Positive: occupied space
  - Negative: empty space

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## Open and Closed Space



Bassano's work exhibits an open frame, the action leads the eyes all over the canvas and off the edges of the frame.

van Eyck's work exhibits a closed frame, the action is centered and the viewer is focused on the main action.



*The Way to Calvary*, c. 1544-5, Jacopo Bassano, National Gallery, London

*The Arnolfini Portrait*, 1434, Jan van Eyck, National Gallery, London

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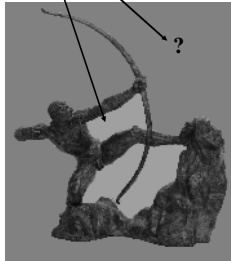
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## Positive and Negative...



*Héraklès archer*, 1909, Emile Antoine Bourdelle, Metropolitan Museum of Art, NY

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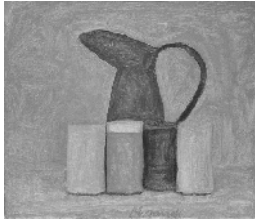
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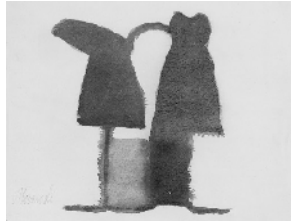
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Giorgio Morandi (Italian, 1890–1964)  
*Still Life (Natura morta)*, 1961  
Oil on canvas; 9 7/8 x 11 7/8 in. (25 x 30 cm)  
Museo Morandi, Bologna



Giorgio Morandi (Italian, 1890–1964)  
*Still Life (Natura morta)*, 1962  
Watercolor on paper; 6 1/4 x 8 1/4 in. (16 x 21 cm)  
Museo Morandi, Bologna

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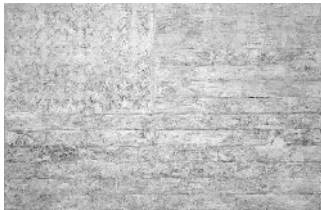
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Detail

*White Flag*, 1955, Jasper Johns  
Encaustic, oil, newsprint, and charcoal on canvas  
The Metropolitan Museum of Art, NY

### Texture

- *The surface quality.*
- *How an object feels, or how it looks like it feels.*
- *Rough, smooth, bumpy, gooey, sharp, etc.*

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*Odalisque in Grisaille*, c. 1824–34, Jean-Auguste-Dominique Ingres and Workshop, Metropolitan Museum of Art, NY

### Value

- *Black thru White*
- *Dark to Light*
- *Adds drama and impact to composition*
- *Gives a sense of timelessness*

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## Color

Artistic term is **HUE**

Pigments for sale at a market stall in Goa, India.

- **PALLETTE** - range of hues.
- **MONOCHROMATIC** - use of all shades of one color from dark to light.
- **POLYCHROMATIC** - use of a variety of hues.

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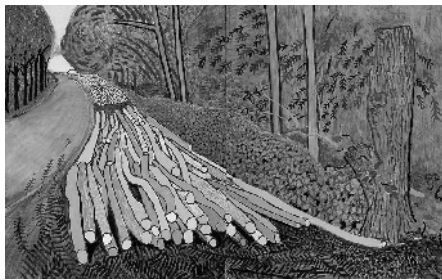
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## Intensity

Intensity is the purity of a hue, and the force of a visual image



More Felled Trees on Woldgate, 2008. David Hockney, oil on canvas, two panels, 60 x 96 in.

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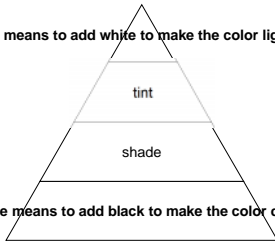
## Tint and Shade

Tint means to add white to make the color lighter.

tint

shade

Shade means to add black to make the color darker.



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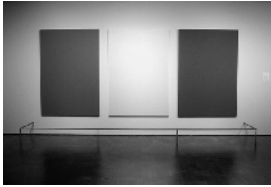
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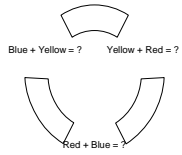
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## Primary Colors

Theory: Mixing primary colors will create secondary colors



Red, Yellow, Blue II, 1965, Ellsworth Kelly



Mixing Light

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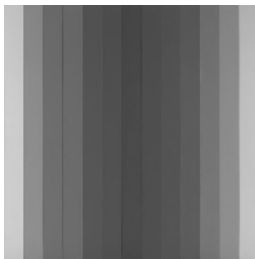
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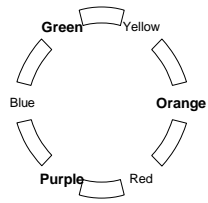
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## Secondary Colors



Spectrum IV, 1967, Ellsworth Kelly, MOMA, NY  
Oil on canvas, thirteen panels, 9'9" x 9'9"



Spectral Sequence  
ROYGBIV

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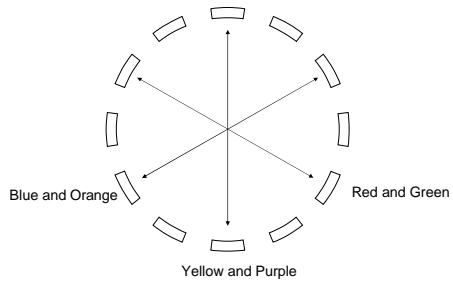
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## Complementary Colors

Complimentary colors are directly opposite on the color wheel.



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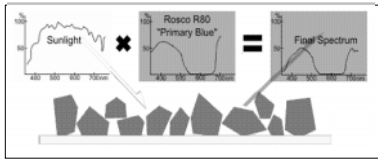
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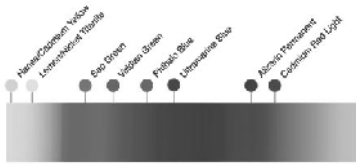
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### Pigments

A pigment is a material that changes the color of reflected or transmitted light as the result of wavelength-selective absorption.



<http://www.webexhibits.org/pigments/>

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### Color Symbolism

Color is often used to make a reference to something symbolic

Colors mean different things in different cultures.



The Annunciation, Fra Angelico, Cortona, Italy, 1433 -1434.

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### Principles of Art

The different arrangements – or compositions - of the ELEMENTS of design to create more visually engaging images.

- Emphasis / Focal Point
- Balance (Symmetry / Asymmetry)
- Unity / Variety
- Contrast
- Movement / Rhythm
- Pattern/Repetition

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**Gestalt Psychology**

**Rules of Visual Perception**

- Proximity
- Similarity
- Continuity
- Closure
- Symmetry
- Foreground & Background
- Size

**Principles of Art & Design**

- Emphasis / Focal Point
- Balance
- Unity
- Contrast
- Symmetry / Asymmetry
- Movement / Rhythm
- Pattern / Repetition

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**Emphasis / Focal Point**

- **Emphasis** in a composition refers to developing points of interest to pull the viewer's eye to important parts of the body of the work.
- The **focal point** of an image is the place where your eyes are drawn to first.
  - Usually the focal point will be highlighted or the most striking color in the work.
  - The focal point can also be reinforced by the implied lines guiding the viewer's perspective.

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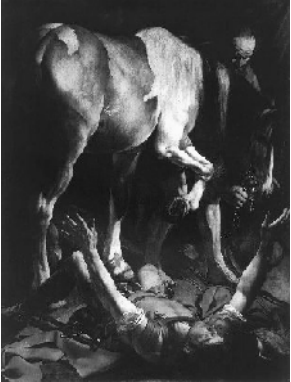
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Where are your eyes drawn to first?  
Next?  
Then?



Where is the focal point of this image?

The Conversion of St. Paul, Caravaggio

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- Several **focal points** or **focal areas** – areas of **emphasis** within this image.
- Artist highlights places over the entire space of the canvas to move the viewer's eyes across the image.
- The artist leads the viewer into a story by way of manipulating the visual language.



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### Pattern/Repetition

- *An element that occurs over and over again in a composition.*
- *Can repeat the element in a consistent pattern.*
- *Can repeat the element in a variation of the pattern.*
- *Patterns happen when an element recurs or repeats throughout the art work. Patterns help establish the rhythm of the overall work. When an established pattern is broken, it can provide variety and/or dissonance for the audience.*

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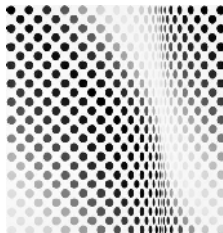
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### Pattern/Repetition



*Pause*, 1964, Bridget Riley, Emulsion on board 115.5x116.



*Wall of Light Desert Night*, 1999, Sean Scully, Oil on canvas; 108 x 132 in. , Modern Art Museum of Fort Worth.

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## Balance - Symmetry & Asymmetry

A sense of stability in the body of work



*The Seine at Port-Villez*, 1894, Claude-Oscar Monet, National Gallery, London



*A Bar at the Folies-Bergeres*, 1881-82, Edouard Manet, Courtauld Institute Galleries, London

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*Samson and Delilah*, c. 1609-10, Peter Paul Rubens, National Gallery, London

## Unity

Everything fits together as a whole - harmony

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*Still Life with Drinking Vessels*, 1649, Pieter Claesz, National Gallery, London

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## Variety

Use of different shapes, textures, colors and values in artwork

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Whistler's Jockey, c. 1762, George Stubbs, National Gallery, London



Nocturne: Blue and Silver - Cremone Lights, 1872, James Abbott McNeill Whistler, Tate Britain

### Contrast

The opposites and differences in value within a work of art.

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Poplars on the Epte, 1891, Claude-Oscar Monet, National Gallery, London



Swifts: Paths of Movement + Dynamic Sequences, 1913, Giacomo Balla, MOMA, NY

### Rhythm

Relationship between the recurring elements in a work of art.

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The Origin of the Milky Way, c. 1575, Jacopo Tintoretto, National Gallery, London

### Movement

Directs a viewer's eye throughout the picture plane.

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### *Linear Perspective*

Sets the *point of view*.  
Aka. one-point-perspective.  
Leads the eyes to a vanishing point within the image.

*The Annunciation, with Saint Emidius*, 1486, Carlo Crivelli, National Gallery, London

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### *Atmospheric Perspective*

Distant objects appear more blue  
Based on observation  
Gives the illusion of a great distance in the background of the image.

*The Garvagh Madonna*  
c.1509-10, Raphael, National Gallery London

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### *Looking at a Painting*

#### *Where Should You Stand?*

- As close as possible
- At arm's length
- From a few feet / meters away
- First close, then far
- First far, then close

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*How to Analyze Art*  
1. *Personal Engagement - Appreciation*

1. *Begin by not reading the label*
2. *Get a first impression*
3. *Look at the lines*
4. *Look at the colors*
5. *Look for possible symbols*
6. *Notice the composition and perspective*
7. *Notice the lighting and shading*
8. *Try to understand the theme*
9. *Finally, read the label*

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2. *Evaluation: **Description**, Analysis, Interpretation*

- *What is it?*
  - *Painting, sculpture, portrait, landscape, manuscript, etc. Each art form has its own history and traditions – are these relevant or interesting?*
- *What is the medium?*
  - *What materials and techniques were used to make it? Have materials been used in a new way? How does the process affect the meaning of the work? Was it made quickly, or over a long period of time?*
- *What condition is it in?*
  - *Is it damaged, or are parts missing? Has it been repaired or renovated? Has its appearance changed?*
- *What is its size or its dimensions?*
- *What is the subject matter?*
  - *Can you recognize any of the people, places, things portrayed?*

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2. *Evaluation: Description, **Analysis**, Interpretation*  
*Content Analysis*

- *What is going on in the work?*
- *Is the subject matter incidental or is it a vehicle for social, religious, moral or political content of either artist or client?*
- *Is it the subject imagined, remembered, or observed directly?*
- *Is the subject treated representationally or is it abstracted?*
- *When, where, and by whom was it made?*
- *What is this work's cultural context?*
- *Is there any symbolism that reveals meanings not immediately apparent?*
- *What is the context of the artwork now?*

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2. Evaluation: Description, **Analysis**, Interpretation  
Formal Analysis

How things are arranged.

- What are the visual **elements** of the image and how are they composed?
- How has the artist used the **elements** and **principles of design** to best express an idea, message and feelings.
- What is the shape of the painting?
- How large is it in proportion to other things around it?
- What are the **edges of the view**.
  - What is included? Can you imagine what might have been visible outside the edges of the picture?

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2. Evaluation: Description, Analysis, **Interpretation**

- Based on an analysis, what do you think the work means?
  - What does the image communicate? What does it mean to you personally? What did it mean to its original audience? Was it a public or a private piece? What was the artist's intent?
- What feelings do you get from the work?
  - What is its mood? Does it capture a mood or emotion that you have already experienced? Can you imagine the artist's feelings while producing the work? How does the artist's use of the elements and principles of design contribute to the mood?

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*The Wolf of Gubbio* (part of San Sepolcro Altarpiece)

1437-44

Sassetta (active by 1427; died 1450)

Egg tempera on poplar

87 x 52.4 cm

- One of seven panels that come from the back of a large two-sided polyptych made for the high altar of San Francesco, Borgo San Sepolcro
- Depicts the life of Saint Francis, founder of the Franciscan Order, who died in 1226.
- Altarpiece was commissioned in 1437 and installed in 1444.
  - The front, showing the Virgin and Child with saints - seen by the congregation
  - The back, with Saint Francis in Glory - seen by the friars in the choir.
  - The eight panels of the Life of Saint Francis which accompanied this image would also only have been seen by the friars.

(National Gallery Description)

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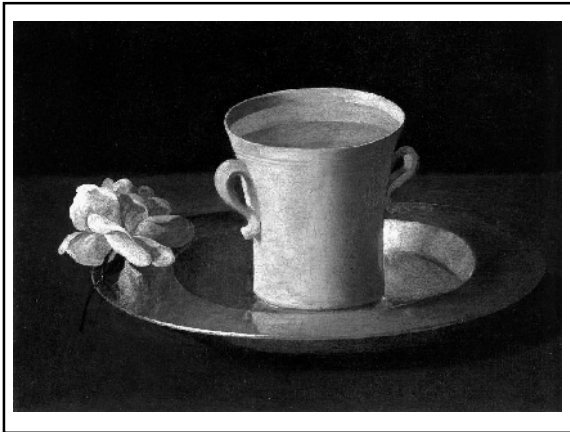
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*A Cup of Water and a Rose*

c. 1630

Francisco de Zurbarán (1598 - 1664)

Oil on canvas

21.2 x 30.1 cm

- Although Zurbarán frequently included still life elements in his subject pictures, he painted very few independent still lifes.
  - The motif of the cup of water on a silver plate with a rose appears in two religious subject paintings by him and in the celebrated 'Still Life with Basket of Oranges' of 1633 (Norton Simon Museum, Pasadena).
- The silver plate is of a kind imported into Spain from Peru.
  - Here the objects may be intended to have a symbolic character: the water in the cup perhaps refers to the Virgin's purity and the flower recalls her title of 'Mystic Rose'.
- The canvas has been cut on three sides but the composition is likely to be substantially complete.

(National Gallery Description)

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Francisco de Zurbarán (1598–1664), *Still Life with Lemons, Oranges and a Rose*, 1633, oil on canvas, The Norton Simon Foundation



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*Calais Pier, with French Poissards preparing for Sea: an English Packet arriving 1803*  
Joseph Mallord William Turner (1775 - 1851)  
Oil on canvas  
172 x 240 cm

- *Turner's picture is based on a real-life event.*
  - In 1802 he took his first trip abroad via Calais. On a sketch for this picture he noted that the seas had been so rough he was 'nearly swampt'.
- *The packet boat is arriving at Calais, full of passengers.*
- *The heavy swell and storm clouds dominate the scene.*
- *The sun breaks through to touch the sail.*
- *The shaft of light from the sun down to the sea forms the centre of the composition.*

(National Gallery Description)

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*Jean de Dinteville and Georges de Selve (The Ambassadors)*

1533

Hans Holbein the Younger (1497/8 - 1543)

Oil on oak

207 x 209.5 cm

- *This picture memorializes two wealthy, educated and powerful young men.*
  - On the left is Jean de Dinteville, aged 29, French ambassador to England in 1533.
  - To the right stands his friend, Georges de Selve, aged 25, bishop of Lavaur, who acted on several occasions as ambassador to the Emperor, the Venetian Republic and the Holy See.
- *The picture is in a tradition showing learned men with books and instruments.*
  - Upper shelf: celestial globe, a portable sundial & other instruments for understanding the heavens and measuring time.
  - Lower shelf: lute, a case of flutes, a hymn book, a book of arithmetic and a terrestrial globe.
- *Certain details could be interpreted as references to contemporary religious divisions.*
  - The broken lute string, may signify religious discord
  - Lutheran hymn book may be a plea for Christian harmony
  - In the foreground is the distorted image of a skull, a symbol of mortality.

(National Gallery Description)

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*End of Part 1*

*Any Questions or Comments?*

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## ART ANALYSIS FORM

### 1. General Information

A. Name of artwork

B. Date created

C. Name of artist(s)

D. Size / Dimensions

E. Medium(s)

F. Date Reviewed

**2. Description**—Not what you think, but what you actually see. Describe what the work of art looks like. Ask yourself questions about the elements of design when describing the artwork. (eg. What are the colors? What types of lines are used? Are light and dark values used? What is the texture? What types of shapes are used? How is the space arranged? (is there a lot of positive or negative space?) )

A. What does the work of art look like? (Describe it)

B. Describe the lines the artist used.

C. Describe the colors the artist used.

D. Describe the texture the artist used.

E. Describe the space and how it is arranged.

F. Describe the values the artist used.

G. Describe the shapes the artist used.

H. If it is 3-dimensional, describe the forms the artist used.

3. **Analysis**—Determine how the artwork is composed, or put together, using the principles of design. (eg. What type of balance is used, what element of art is emphasized, are the elements of design used to create contrast?)

A. How did the artist achieve balance?

B. How did the artist use rhythm?

C. How did the artist create unity? (are there similar colors, lines that lead your eye from one point to another, patterns, etc?)

D. How does your eye move around the work of art?

E. What patterns are there?

F. What part of the work of art is emphasized?

G. What areas have the most contrast?

4. **Interpretation**—Decide what you think the artist was trying to communicate to the viewer.

A. Do you think that this piece has a special message or meaning?

B. Does the work evoke any feelings, ideas, or thoughts to you?

C. Why do you think the artist created this work?

D. What style of art is the artist working in?

5. **History**—Address historical and cultural context.

A. How did history or culture affect this artwork?

B. How did this artwork affect history or culture?

6. **Judgment**—An intelligent decision about the success of the artwork based on the following:

A. What do you think of the craftsmanship in this work of art?

B. What do you think of the artist's use of elements and principles of design? (Did the artist use them effectively or not?)

C. Did the artist effectively show the intended mood, meaning, and feeling?

D. What are the strong areas of this work of art?

E. What areas need improvement?

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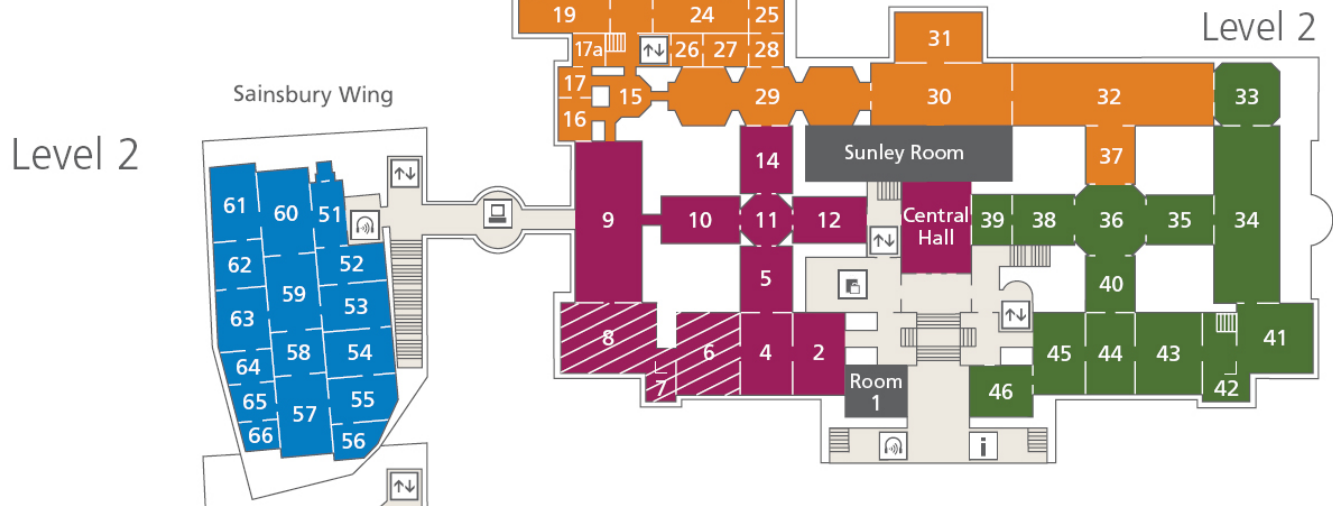
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**Works to be covered**

Room 62	Giovanni Bellini, <i>Portrait of the Doge Leonardo Loredan</i> , 1501-4
Room 59	Carlo Crivelli, <i>The Annunciation, with Saint Emidius</i> , 1486,
Room 56	The Arnolfini Portrait, 1434, Jan van Eyck
Room 25	Harmen Evertsz Steenwyck, <i>Still Life: An Allegory of the Vanities of Human Life</i> , c. 1640
Room 24	Pieter Claesz, <i>Still Life with Drinking Vessels</i> , 1649
Room 30	The Toilet of Venus ('The Rokeby Venus'), Diego Velazquez, c. 1644-48,
Room 30	Francisco de Zurbarán, <i>A Cup of Water and a Rose</i> , c. 1630
Room 34	George Stubbs, <i>Whistlejacket</i> , c. 1762
Room 34	Joseph Wright of Derby, <i>An Experiment on a Bird in the Air Pump</i> , 1768,
Room 43	Claude-Oscar Monet, <i>Poplars on the Epte</i> , 1891
Room 43	Claude-Oscar Monet, <i>The Japanese Bridge</i> , c.1919-24,
Room 4	Hans Holbein the Younger, <i>Jean de Dinteville and Georges de Selve ('The Ambassadors')</i> , 1533

**Other Works**

Room 9	<i>The Way to Calvary</i> , c. 1544-5, Jacopo Bassano
Room 30	The Toilet of Venus ('The Rokeby Venus'), Diego Velazquez, c. 1644-48,
Not on display	Claude-Oscar Monet, <i>The Seine at Port-Villez</i> , 1894,
Room 29	Peter Paul Rubens, <i>Samson and Delilah</i> , c. 1609-10
Room 9	Jacopo Tintoretto, <i>The Origin of the Milky Way</i> , c. 1575
Room C	Raphael, <i>The Garvagh Madonna</i> , c.1509-10
Room 54	Sassetta, <i>The Wolf of Gubbio</i> (part of San Sepolcro Altarpiece), 1437-44
Room 30	Francisco de Zurbarán, <i>A Cup of Water and a Rose</i> , c. 1630
Room 34	JMW Turner, <i>Calais Pier, with French Poissards preparing for Sea: an English Packet arriving</i> , 1803