

Ideas with IMPACT



idea packet

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Mosaics: Unity & Harmony in Broken Bits of Color



Mosaics:



Harmony in broken bits of color

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Goals and objectives: Learning Outcomes

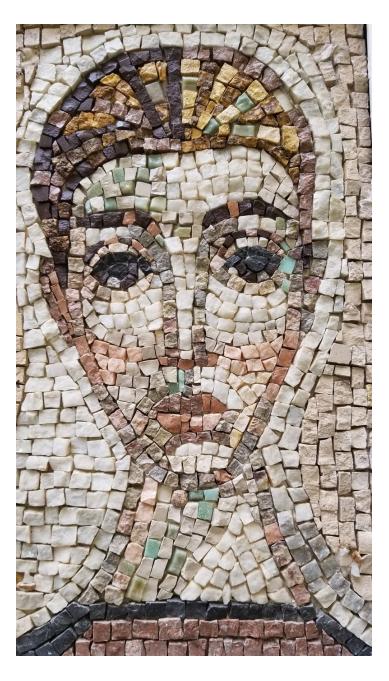
Students will learn about the ancient art of mosaics and its decorative and symbolic traditions. They will see its durable qualities to understand why this would be an appropriate media for a school mural.

The construction of a glass/tile Mosaic Mural will contribute to the development of your students in four broad goals:

- 1. **Perception:** students will participate in transforming part of their school. They will perceive and learn to value strengths in the school's architectural history and possibilities in the future of the building. They will also perceive how art celebrates, transform and records human experiences for present day and future communities.
- 2. **Production:** students will learn to work with their hands with potentially dangerous media such as glass and tile on a community team project where everyone contributes but the final project is larger than any one individual contribution. The mural production will also teach them to work safe, and in a focused sequential order to achieve the intended goals.
- 3. **Critical Reflection:** students will learn to identify sensory, emotional and qualities of nature, culture, history and art and recognize the importance of reaching and maintaining a balance with our past and

our future. These ideas will give them time to reflect upon school and community values and to express their ideas though visual symbolism.

4. **Valuing Traditions:** students will learn the ancient art form of mosaics and the contribution of various artists from diverse cultures and different times. They will also learn about the history of their school and how traditions and history serve to strengthen us.



Florida Standards

Visual Arts Standards

- **VA.68.O.1.1:** Make connections between the structural elements of art and the organizational principles of design to understand how artwork is unified.
- **VA.68.O.1.4:** Create artworks that demonstrate skilled use of media to convey personal vision.
- **VA.68.O.2.1:** Create new meaning in artworks through shared language, expressive content, and ideation.
- **VA.68.O.2.4:** Select various media and techniques to communicate personal symbols and ideas through the organization of the structural elements of art.
- **VA.68.H.2.2:** Explain the impact artwork and utilitarian objects have on the human experience.
- **VA.68.H.3.2:** Discuss the use of background knowledge and critical-thinking skills, learned in the visual arts, to understand varying concepts, viewpoints, and solutions.
- **VA.68.H.3.3:** Create imaginative works to include background knowledge or information from other subjects. Examples: e.g., from history, environment, literary works
- **VA.68.F.1.1:** Use non-traditional thinking and various techniques to create two-, three-, and/or four-dimensional artworks.
- **VA.68.F.3.2:** Analyze the procedural and divergent thinking skills developed in visual art to identify a purpose for the communication of art ideas.

VA.68.S.2.2: Create artwork requiring sequentially ordered procedures and specified media to achieve intended results.

Social Studies Standards

SS.6.G.2.6 Explain the concept of cultural diffusion, and identify the influences of different ancient cultures on one another.

SS.8.A.1.6 Compare interpretations of key events and issues throughout American History.

SS.8.A.1.7 View historic events through the eyes of those who were there as shown in their art, writings, music, and artifacts.

SS.6.W.2.10 Compare the emergence of advanced civilizations in Meso and South America with the four early river valley civilizations.

World Languages Standards

WL.K12.NM.6.1 Recognize basic practices and perspectives of cultures.

WL.K12.NM.6.4 Recognize products of culture (e.g., food, shelter, clothing, transportation, toys).

WL.K12.AH.6.4 Analyze diverse cultural products among groups.

Science Standards

SC.6.E.7.7 Investigate how natural disasters have affected human life in Florida.

SC.5.L.17.1 Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.8.N.1.1 Define a problem from the eighth grade curriculum using appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.



Course Outline/Overview: Seeing the whole picture

If a picture is worth a thousand words, a mosaic is worth at least a hundred thousand - every mosaic involves images of the smallest of units: *a tesserae*.

Because mosaics are made in stone we can enjoy art that is over 18 centuries old. But that doesn't mean the media has not transformed and developed in all that time. From the first mosaics that were made from small pebbles, mosaics evolved to include shells, cut glass, precious metals, cut jewels, carved wood, and ceramic tiles. Today, there are digital photo mosaics and mosaics from recycled trash items. Along the way, art movements arose, and cultural values changed. So did styles and subject matter, and at times it even crossed over from 2-D to 3-D; however, the media prevails as vibrantly today as it did in ancient times.

Mosaic is a simple, yet intricate, ancient art form requiring patience and sensibility. It can transform monochromatic and monotonous ordinary spaces into artistic and whimsical places. This makes it the ideal school medium. Students who create mosaics will practice patience and learn how to reach consensus as they work. This builds community and classroom cooperation, and it has a transformative effect that fosters peace. Additionally, Miami provides perfect outdoor lighting and our schools are filled with outdoor balconies and hallways. Mosaics offer an indestructible "graffiti proof" surface. Many students who claim that "they can't draw" love creating mosaics, as they perhaps unwittingly learn about color, value, proportions, spaces, unity, while cutting and gluing those tiny intricate

shapes. Whether you work on paper mosaics or full-blown glass or ceramic mosaic your students will put their cell phones down and engage in art making. Plus, your project can be displayed as a large-scale mural on your campus, contributing to school pride and school beautification as well as building community and personal ownership.

Adapting the project: Making it work for you

People have made mosaics for centuries and each region and/or culture adapted the process. If tile and glass don't work for your classroom you can adapt the project and make it out paper, cardboard, plastic, or recycled trash. Adapting it to fit your theme or needs is part of the creative process.

Finishing Touches: Displaying the artwork

Before designing and constructing your mosaic select the appropriate location to install your mosaic. You want your mural to be in a highly visible location for all to enjoy for years to come. Consider the size of your mural since larger pieces should be viewed from a distance. Glass mosaics are expensive so you should select a secure place. Lastly, give some thoughts to the elements and maintenance. Discuss all possible sites with your administration and get their buy in before you invest in the project.

Lesson Plan: Mosaics: Harmony in broken bits of color

Media: Glass and Tile Period(s): Grade(s) 6-8 Dates:

Materials: Dura Rock cement boards Pencils Rulers Markers Photos of mosaic theme Tile and glass Glass cutters and nippers Goggles and gloves Cement and grout	Visual/Resources: Elements of Art Principles of Design Roman Mosaics Islamic Mosaics Art Nouveau Mosaics ESOL Strategies: Demonstrations and visuals	
Tile/glass glue Trays and containers for tesserae Tweezers Aprons Band-aides Brushes for cleaning		
Procedures: Discuss historical perspectives of mosaics. Review the Elements of Art and Principles of Design. Come up with a theme. Have each student sketch a possible design solution. Designs may be influenced or inspired by different artists or cultures but should not be plagiarized. Note: designs may change during the creative process. Select drawings. Draw a contour drawing on the cement boards. You may color code sections for clarity. Separate color glass and tiles by colors. Demonstrate cutting glass techniques. Review safety protocols. Make sure all students are wearing safety goggles and are using brushes to clean up. No eating or drinking by the mosaic work area. Begin to glue the glass/tile on the boards filling up the drawing but leaving 1/8"-1/4" around the tesserae. After all the tesserae are glued and dry you may add the grout. Clean the grout and polish it. Display the work.		
Vocabulary: Mosaic Mural Value Pattern Grid Measurements Contour line Grout Tesserae Tessellation Sketchbook/Journal or Home Learning: 1 Plan and sketch your design in your sketchbook. 2 Copy mosaic vocabulary. 3 Gather possible mosaic materials (such as recycled plastics, beach glass, shells, broken ceramics, etc.) to incorporate into the mosaic.	Performance Assessment ☐ Observation of final product ☐ Interview with student ☐ Group assessment (critique) ☐ Observation of process (student working) ☐ Self-assessment by student ☐ Portfolio ☐ A. tracking ☐ B. demonstrates growth ☐ C. compiles a variety of processes, techniques, and media ☐ Journals ☐ A. ideas for projects ☐ S. sketches ☐ C. teacher-generated assignments ☐ Wocabulary test ☐ Wocabulary test ☐ Unit test ☐ Essay ☐ Report	

Elements of Art

These are the basic elements that are used by Artists in creating Art; they are what you use to create an aesthetically pleasing work. When we make Art, we need to understand and apply these seven Elements of Art.



Line

A mark made by a pointed tool such as a brush, pen or stick; a moving point.



Shape

A flat, enclosed area that has two dimensions, length and width. Artists use both geometric and organic shapes.



Color

Is one of the most dominant elements. It is created by light. There are three properties of color; Hue (name,) Value (shades and tints,) and Intensity (brightness.)



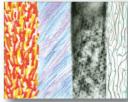
Valve

Degrees of lightness or darkness. The difference between values is called value contrast.



Form

Objects that are three-dimensional having length, width and height. They can be viewed from many sides. Forms take up space and volume.



Texture

Describes the feel of an actual surface. The surface quality of an object; can be real or implied.



Space

Is used to create the illusion of depth. Space can be two-dimensional, three-dimensional, negative and/or positive.

Principles of Design

These are the standards or rules to be observed by Artists in creating works of Art; they are how to create and organize Artwork. When elements are utilized with the principles in mind, outstanding Artwork is created.



Balance

A distribution of visual weight on either side of the vertical axis. Symmetrical balance uses the same characteristics. Asymmetrical uses different but equally weighted features.



Contrast

The arrangement of opposite elements (light vs. dark, rough vs. smooth, small vs large, etc...) in a composition so as to create visual interest.



Emphasis

Used to make certain parts of an Artwork stand out. It creates the center of interest or focal point. It is the place in which an Artist draws your eye to first.



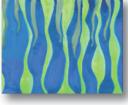
Movement

How the eye moves through the composition; leading the attention of the viewer from one aspect of the work to another. Can create the illusion of action.



Pattern

The repetition of specific visual elements such as a unit of shape or form. A method used to organize surfaces in a consistent regular manner.



Rhythm

Regular repetition of, or alternation in elements to create cohesiveness and interest.



Unity

Visually pleasing agreement among the elements in a design; It is the feeling that everything in the work of Art works together and looks like it fits.

Historical and Cultural Connections: 18 Centuries of Spanish Mosaics

Roman

The history of mosaic goes back some 4,000 years or more. The earliest known mosaics were found in a Mesopotamian temple dating back to the 3rd millennium BC. Made up of ivory, seashells, and stones, these decorative, abstract pieces laid the groundwork for mosaics made thousands of years later in Ancient Greece and the Roman Empire.

By the eighth century BC, there were pebble pavements, using different colored stones to create patterns, although these tended to be unstructured decoration. It was the Greeks, in the four centuries BC, who raised the pebble technique to an art form, with precise geometric patterns and detailed scenes of people and animals. But it was the Romans who spread mosaics throughout the world.

Roman mosaics often copied earlier colored ones, however, the Romans did develop their own styles and production schools were developed across the empire which cultivated their own particular preferences - large scale hunting scenes and attempts at perspective. By 200 BC, specially manufactured pieces ("tesserae") were being used to give extra detail and range of color to the work. Using small *tesserae*, meant that mosaics could imitate paintings. Roman mosaics therefor became a common feature of private homes and public buildings across the empire from Africa to Antioch, and Iberia, being strategic to the Roman Empire, has many impressive examples. Mosaics are not only beautiful works of art, but they also provide us with invaluable glimpses at history. They record

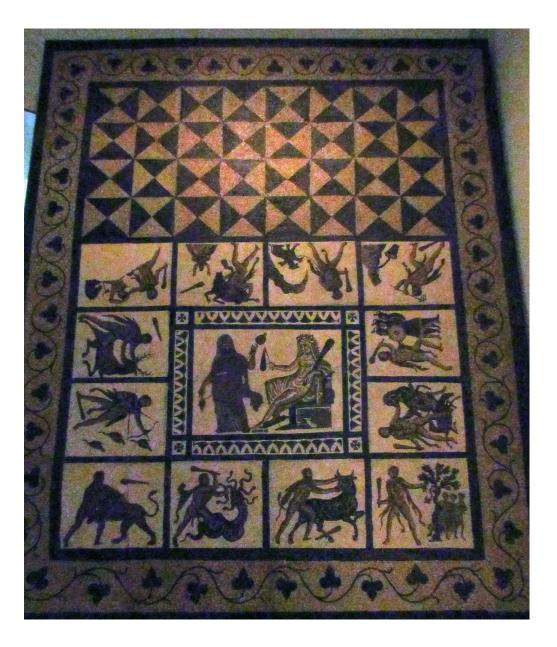
everyday life items such as clothes, food, tools, weapons, flora and fauna. They also reveal much about Roman activities like gladiator contests, sports, agriculture, hunting, politics, romance and sometimes they even capture the Romans themselves in detailed and realistic portraits as well as their fears, hopes and values.

Technique

Mosaics, otherwise known as *opus tesellatum*, were made with small black, white and colored squares typically measuring between 0.5 and 1.5 cm but fine details were often rendered using even smaller pieces as little as 1 mm in size. These squares (*tesserae* or *tessellae*) were cut from materials such as marble, tile, glass, smalto (glass paste), pottery, stone and even shells. A base was first prepared with fresh mortar and the *tesserae* positioned as close together as possible with any gaps then filled with liquid mortar in a process known as grouting. The whole was then cleaned and polished.

Flooring

Mosaics really took off as an art form and detailed panels using *tesserae* rather than pebbles began to be incorporated into patterned floors. Many of these mosaics attempted to copy contemporary wall paintings. The spread of mosaics, which used two-dimensional and repeated motifs to create a 'carpet' effect, is a style, which would later on heavily influence Christian churches and Jewish synagogues.



Mosaic with the Labors of Hercules, 3rd century AD, found in Liria (Valencia)
National Archaeological Museum of Spain, Madrid

This 3rd century AD mosaic, made of limestone, was found in 1917 in Lliria (Roman Edeta) near Valencia, Spain. The central panel shows Hercules, dressed in women's clothing and holding a ball of wool, beside the Lydian queen Omphale wearing the skin of the Nemean Lion and carrying Heracles' olive-wood club. Around the central panel are vignettes depicting the twelve labors of Hercules.



Mosaic of Medusa and the seasons, ca. AD 167-200, found in Palencia National Archaeological Museum of Spain, Madrid.

A splendid 2nd century AD mosaic from Palencia depicts the Gorgon Medusa and the four seasons. Birds, sea lions and sea horses surround the Medusa mask and the portraits of the four seasons. They symbolize fertility and the harmonious evolution of the year. Medusa was a popular image in many Roman homes as it was thought her ability to turn people to stone would ward off evil and wrong doers.



The Plant Mosaic with dolphin, 4th century AD, found in the Villa del Ramalete National Archaeological Museum of Spain, Madrid

Floor mosaic depicts a dolphin surrounded by plant motifs with intertwined garlands and branches with flowers and fruits. They symbolize the abundance and fertility of nature.



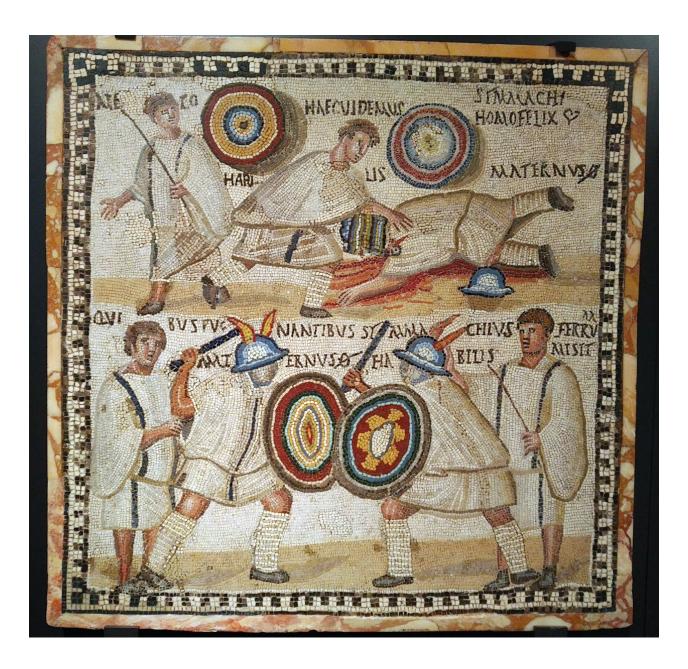
Mosaic of the seasons and the months, 3rd century AD, found in Hellin (Albacete)
National Archaeological Museum of Spain, Madrid

The concept of time has always held a great interest for humanity and under the Roman Empire it took a very particular meaning. The Empire was likened to the universe and the Emperor likened to the master who regulated the universe. The passage of time and the succession of days, months and seasons illustrate the eternal renewal of the universe, and thus, the Roman empire (Source: Tunisian Mosaics: Treasures from Roman Africa, Aïcha Abed, 2006 Getty Conservation Institute). The mosaic above depicts a calendar with illustrations of the months and the

seasons set amid bucolic and mythological scenes. A sign of the zodiac and a tutelary deity or a deity whose birth is associated with that month represents each month. There are also allusions to religious festivals. The mosaic celebrates the renewal of the cycle of nature which, aided by the gods, would provide the villa's owner with sustenance and wealth.

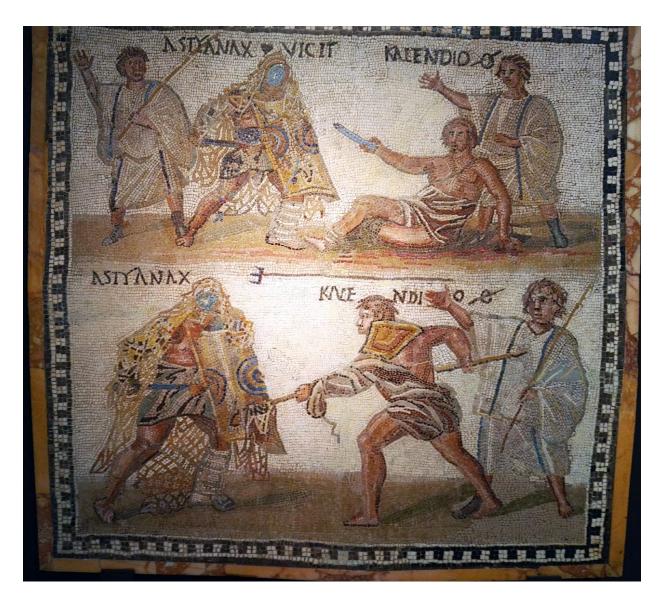
Wall Mosaics

Mosaics were by no means limited to flooring. Vaults, columns and fountains were often decorated with mosaic (opus musivum), again, especially in baths. In other locations pieces of marble and glass were also added the whole giving the effect of a natural grotto. By the 1st century CE more detailed mosaic panels were also used to embellish fountains. In Pompeii and Herculanum the technique was also used to cover niches, walls and pediments and once again these murals often imitated original paintings. The walls and vaults of later Imperial Roman baths were also decorated in mosaic using glass, which acted as a reflective of the sunlight hitting the pools, and created a shimmering effect. The floors of the pools themselves were often set with mosaic, as were the floors of mausoleum, sometimes even incorporating a portrait of the deceased. Once again, the Roman use of mosaics to decorate wall space and vaults would go on to influence the interior decorators of Christian churches from the 4th Century to the present t and advertising in the 20th Century.



Mosaic depicting the fight between two equites named Simmachius and Maternus, 3rd century AD National Archaeological Museum of Spain, Madrid

This mosaic from the Via Appia in Rome dating from the 3rd century AD depicts a pair of gladiators. The fight of two *equites*, who can be identified by their small round shield, in the lower scene depicts Habilis and Maternus, flanked by two *lanistae* (referees). In the upper scene, Maternus lies in a pool of blood, about to be dispatched by his opponent. The crossed-out O beside Maternus' name symbolizes death.



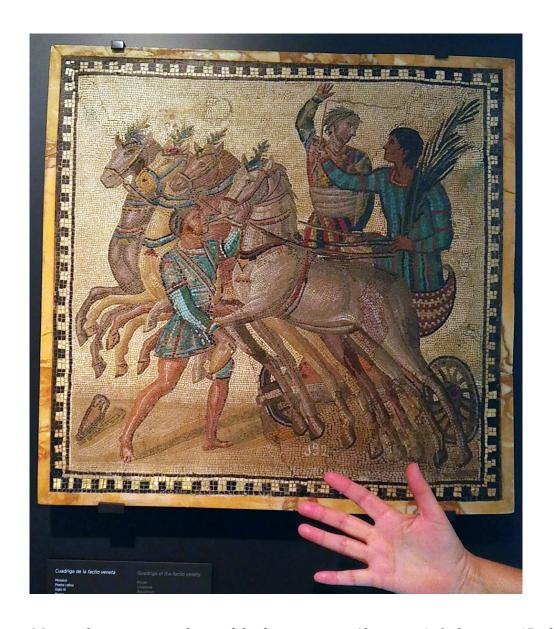
Mosaic showing a retiarius named Kalendio fighting a secutor named Astyanax, 3rd century AD National Archaeological Museum of Spain, Madrid

The other mosaic depicts a *lanista* officiating a gladiatorial contest. He is clearly identifiable in a white tunic holding his staff and gesturing to the gladiators. The *secutor* Astyanax and the *retiarius* Kalendio are engaged in a fight to the death. The *lanista* cheers them on. The outcome is shown above and confirmed by the inscriptions; the word VICIT appears beside Astyanax meaning he is the victor. Beside Kalendio's name is a crossed-out O, an abbreviation for Obiit meaning "he died".



Mosaic depicting a quadriga of the factio prasina (the greens), 3rd century AD, from Rome National Archaeological Museum of Spain, Madrid

The most popular sport in Rome was chariot racing, even more popular than gladiatorial combats. Men went to the races and bet on which horses would win. The museum houses three small mosaics depicting scenes of chariot races. The first one above depicts a *quadriga* of the *factio prassina* (four-horse chariot of the green faction). The green team is victorious as the charioteer is holding a palm leaf.



Mosaic depicting a quadriga of the factio prasina (the greens), 3rd century AD, from Rome National Archaeological Museum of Spain, Madrid

The driver's clothing was color-coded in accordance with his faction, which would help distant spectators to keep track of the race's progress. The second mosaic below depicts a *quadriga* of the *factio veneta* (four-horse chariot of the blue faction) whilst the third one depicts a *quadriga* of the *factio russata* (four-horse chariot of the red faction). Both teams are shown as the winner of the race. My hand adds some perspective to show the smaller size *tesserae* used for wall mosaics.



Islamic

In the west of Europe, the Moors brought Islamic mosaic and tile art into the Iberian peninsula in the 8th century, while elsewhere in the Muslim world, stone, glass and ceramic were all used in mosaics. In contrast to the figurative representations in Byzantine art, Islamic motifs are mainly geometric and mathematical.

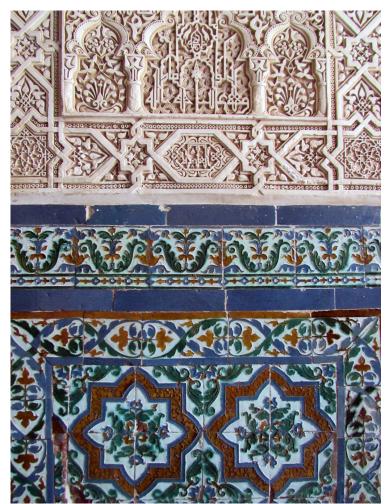


The Palaces of the Alhambra



Nasrid tilework:

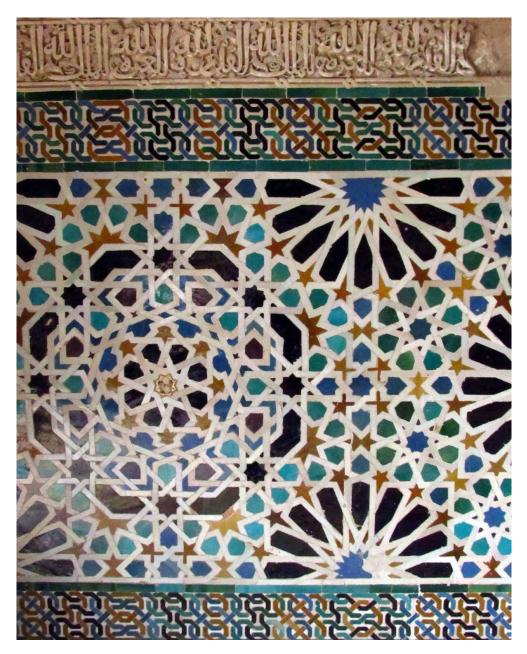
The most representative mosaic tile work in Muslim Andalucia was created using *alicatado*, which consisted of cutting glazed monochromatic ceramic pieces into different geometric shapes (called *aliceres*) which were later arranged next to each other without leaving any gaps and without overlapping.





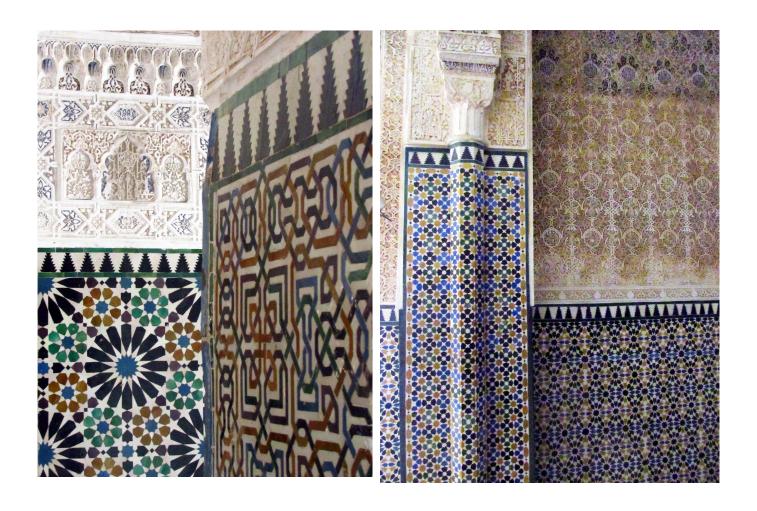
Various materials in ceilings, doors and walls.

The mosaics created tessellating mathematical patterns and adorned the Nasrid kingdom, which was headquartered in the Alhambra of Granada. They employed regular polygons (such as squares), equilateral triangles and hexagons, to devise new geometric shapes capable of covering the entire surface area. These are now known as the Nassrid polygons.



Polygons and networks form tessellating patterns.

Mosaic friezes and rosettes or wheels are the most complex compositions and combine polygons with ribbons and eight, twelve or sixteen pointed stars, that go on to infinity. New colors, such as honey, cardinal purple and and violet, were introduced to the original blue green tones. Color was used to establish specific visual Movement (see Principles of Design chart) in the designs.



NOTE: There are several differences between tile that was manufactured in the rest of Europe and Moorish tile. Islamic art forms do not use figurative motifs, making the Moorish designs purely abstract. Also, the color range is much broader and brighter than with European inlaid tile, which was prevalent during this time period.

In addition, the method of production was also very different. Whereas the rest of Europe cut the tiles from raw clay before firing them, in Spain the tiles were fired first as a large slab, and then cut. Because this method eliminated shrinkage, Moorish craftsmen were able to lay the tiles with very thin grout lines, allowing for a high level of intricacy.



Varied typology created in Sevilla in the 16 Century, but influenced by Mudejar geometric styles.

Mudejar Tilework:

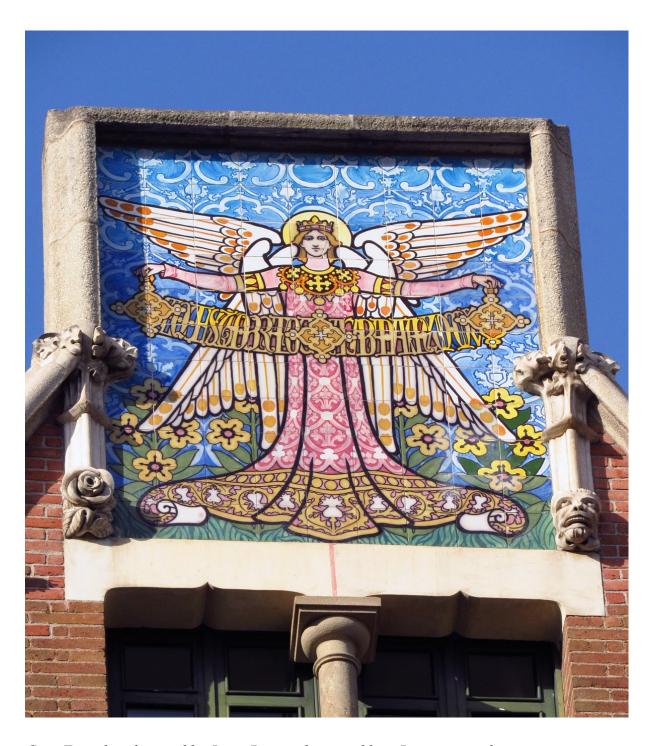
Mudéjar was originally the term used for Moors or Muslims of Al-Andalus who remained in Iberia after the Christian Reconquista but were not initially forcibly converted to Christianity or forcibly exiled. From the 15th to the 17th Century, Moorish art combined with the Christian culture, and this mixed art form is called the *Mudejar* style. This hybrid style had a strong presence in architecture, crafts, carpentry and ceramics. Tiling was a common resource in *Mudejar* decoration. The result of this cultural marriage is that southern Spain became a mecca for gorgeous wall tile.







Casa Pilatos and a Catholic church in Sevilla, Spain. Both show beautiful examples of Mudejar tile work.



Casa Terradas, designed by Josep Puig and inspired by a Bavarian castle.

Modernisme / Art Nouveau

In the late 19 Century we see the emergence of a new art movement in Europe. This movement that thought to break with the past by focusing on grater creative freedoms was named Art Nouveau in Belgium and France and Modernisme in Spain.





Exterior and interior of Antoni Gaudi's Casa Batllo in Passeig de Gracia, designed by city planner Idelfons Cerda as one of the main streets of Barcelona.

It flourished in Barcelona, which at the time was growing and expanding as a result of the economic boom of the Industrial Revolution. To avoid health problems associated with overcrowding municipal authorities approved demolition of the old medieval walls to expand the city.



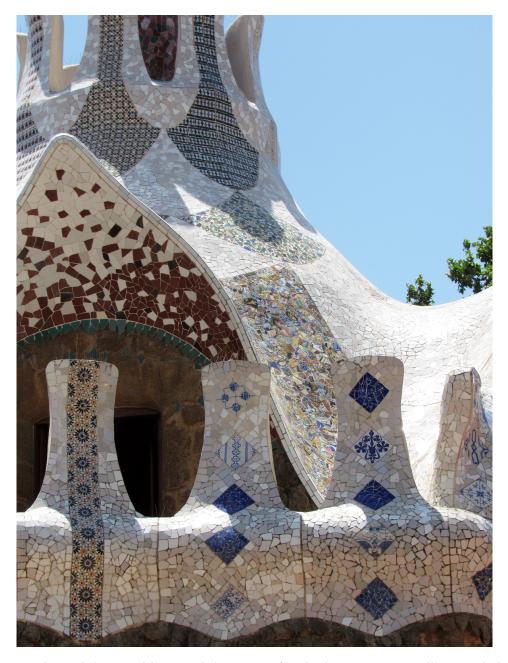


Casa Vicens and Sagrada Familia, both designed by Gaudi

This gave way to Modernists architects such as Jose Maria Jujol, Josep Puig and Antoni Gaudi to express their ideas on the use of color, and nature in building designs.



Antoni Gaudi, now renown for his mosaics, developed a style that was both personal and revolutionary. He was inspired by observing nature and incorporated shapes from the natural world into all his designs. The name of this technique, *Trencadis*, comes from his use of broken tiles, plates and cups. *Trencar* in Catalan means '*To break*', hence *trencadis* is the equivalent for 'breakable' The breakable pieces were originally recycled for finishing uneven corners. This technique is derived from both the neomudejar style of Islamic mosaics in Spain, as well as the *Opus tessellatum* technique employed by the ancient Romans.



Park Güel designed by Gaudí but never finished. It was originally intended as a housing development project in the midst of nature.

Gaudí became the hallmark of trencadis mosaics. His magnificent, bigger than life, designs, masterful use of color, attention to details, incorporation of nature and superb craftsmanship has become so recognized worldwide that today most people refer to it as" Gaudí Mosaics"

Supplies: What you will need, what you will want and where to get it

Materials:

'Dura-Rock' cement board(s)

Pencils

Rulers

Tiles and glass

Glasscutters and nippers

Goggles and gloves

Cement grout

Trays

'Weldbond' glass glue

Brushes for cleaning

Tweezers

Optional but strongly suggested:

Permanent markers

Aprons

Reference photos for drawing

Dedicated 4' x 6' tables

Flattened old cardboard boxes for covering the mosaic

Plastic containers for separating the tiles by colors

Protective Glaze

Band-aides

Paint scraper or a screwdriver

Adapted projects: Mosaics not using tile or glass

Cardboard

Mosaic paper squares

Tacky Glue

Scissors

Construction paper

Old magazines

Recycled plastics

Suppliers:

Delphi Glass

Delphi Glass Corporation is an American retail and wholesale company specializing in art glass supplies located in Lansing, Michigan. They have amazing glass, tools, glass glue, and many tutorial videos online and discount coupons.

Floor & Decor

Floor & Decor is an American specialty retailer of hard surface flooring and related accessories. They have a store in Doral where you can get Dura Rock cement boards, glass and ceramic tools, gloves, goggles, grout and glazes. It's nice to go to the store and see the tools before you order them.

Blick Art Materials

Blick has an extensive selection of art supplies. You can order tiles and mosaic tools online, but they also have a local store in South Miami.

Artist & Craftsman

Art supply store in Miami, (701 Northwest 27th Avenue) Here you can get lots of creative supplies, especially if you are adapting your project and NOT using glass or tile.

Field Study Trips:

Visiting 'Wynwood Walls' and seeing all the murals will give students a great perspective on large scale art, art in public places and art that transforms living spaces.



Art in Public Places, Wynwood sidewalk mosaic installation designed by L. Fuller.