

Patterns of Complexity: The Art and Design of Morocco and Tunisia

Fulbright-Hays Seminar Abroad Curriculum Project 2011

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Religious Diversity in the Maghreb

From June 12 to July 21, 2011, I was one of sixteen post-secondary educators who participated in the Fulbright-Hays Seminars Abroad program to Morocco and Tunisia. During those six weeks, we were immersed in the culture of the two North African countries, visiting significant historical and cultural attractions, attending lectures daily, tasting regional cuisine, and taking Arabic language classes for the first two weeks. The topic of the seminar was "Religious Diversity in the Maghreb: Morocco and Tunisia," so lectures were focused primarily on Islamic topics, such as Moroccan Islam and Sufism, with some topics covering Judaism. We were treated to two musical performances, one relating to Judeo-Spanish Moroccan narrative songs and the other by Gnawa musicians. Visits to Christian churches, Jewish museums and synagogues, and Islamic mosques rounded out the religious focus.

The group was in Morocco for a total of four weeks and Tunisia for two.

In Morocco, we visited the cities of:



| | |
|---------------|----------------|
| Rabat* | Casablanca* |
| Sale | Beni Mellal* |
| Fes* | Azilal |
| Volubilis | Amezray* |
| Moulay Idriss | Zaouia Ahansal |
| Sefrou | Marrakech* |
| Ifrane | |

In Tunisia, we visited the following cities:



| | |
|---------------|--------------------|
| Tunis* | Monastir |
| Carthage | Mahdia* |
| Sidi Bou Said | El Jem |
| La Marsa | Sfax |
| Kairouan | Kerkennah Islands* |
| Sousse* | Djerba* |

* cities with an overnight stay

For more information, you may contact me at sueuhlig@gmail.com. I also have my photos from this seminar on Flickr. <http://www.flickr.com/photos/25315113@N08/>

Background

Being an art educator, teaching art methods classes to both art education and elementary education majors, as well as teaching a large lecture class of art appreciation to a general student population, I wanted to focus on the art and design of Morocco and Tunisia for this curriculum project. While seminar lectures during the program did not directly relate to my project, the on-site visits to Islamic buildings, cultural institutions and historical sites did with the amazing variety of complex patterns that used a diverse assortment of media, and I was able to take numerous photographs for my curriculum project. (Please see my photostream on Flickr.) Research for this project has been on going, and I have consulted dozens of sources, both printed media and on the Internet. Where I was not able to obtain resources on just the art of Morocco and Tunisia, I included information about Islamic art in general when it related to the pattern and design, media, and artistic processes of the two countries. All of the print media listed in the Resource section was either borrowed from the university library or was personally purchased (mostly from Amazon), so these resources should be relatively easy to obtain for further exploration or implementation by the reader.

This curriculum project, Patterns of Complexity, consists of the following components:

- A PowerPoint presentation
- Curriculum packet with project ideas for the teacher and a list of resources
- Student handouts with visuals

Due to space constraints, the large files of the PowerPoint and student handouts are located in Dropbox. Please access the PowerPoint at the following address:

<http://dl.dropbox.com/u/54970004/Patterns%20of%20Complexity%20Curriculum%20Unit%20copy.pptx>

It is a large file and will take a few minutes to download.

It is designed primarily for art education classes for both art education and elementary education majors. Since it is designed for pre-service teachers, practicing K-12 teachers can also use it with their students. The PowerPoint presentation can be used for outreach activities or integrated into other courses, such as art appreciation. The PowerPoint can further be broken up for individual study of certain topics or for visual examples to accompany the studio projects. Since I teach a variety of classes, I wanted a curriculum project that has flexibility and that could easily be adapted to meet the needs of each course I teach, whether it be integrated in its entirety or broken up into smaller sections.

Each media or subject contains a brief description of three (or more) different studio activities, organized into basic, intermediate and advanced.

- The basic activities are the least complicated activities or have more accessible materials, intended for elementary students or those who want an introductory project to implement.
- The intermediate activities require more complex processes or materials that are more difficult to work with, intended for middle school or those who want a more complex project.
- The advanced activities are the most difficult to produce due to more advance materials, concepts, time required, or craftsmanship needed, intended for high school students or those who want a more comprehensive and in-depth project.

Challenges

I encountered a number of challenges in completing this project.

1. *The seminar focus was on religion but not on religious art.*

The seminar topic intrigued me, as I wanted to learn more about Islam within its context. Seminar lectures were strictly on religious topics, but there was no formal discussion of religious architecture or religious art. Occasionally, there was a visit to a museum or artisan's studio where there was art, but there was no direct lecture or explanation of artistic practices, techniques, or styles. I found taking photographs of the architecture to be the primary means of research during the program.

2. *There was a language barrier.*

Moroccans and Tunisians speak Arabic, Darija (Moroccan Arabic), French, Tamazight (the Berber language), and/or some English. While they are multilingual, I am unfortunately not. While in North Africa, if one of the participants or leaders who could speak French or Arabic were not around to translate, communication for me was difficult. Some of the literature found during post-trip research was in French. A translator web site proved to be extremely helpful during the completion of this project.

3. *There are relatively few resources dedicated to the art of Morocco or Tunisia.*

There are many resources available on Islamic art, but books dedicated solely to art of the Maghreb are few. I researched resources on Moroccan and Tunisian art and architecture at the university library, on bookstore websites, and on the Internet. The resources section in this project identifies books, articles, educator guides, and web sites used to complete this curriculum project that focus on art and artistic practices related to Morocco and Tunisia.

4. *This was a first-time travel experience to North Africa.*

I find when I initially travel to a new destination, I can never prepare fully as there are many unknowns. Even though there was a set itinerary for the trip given prior to departure, the itinerary did change based upon availability, safety concerns, and time. Plus, it is difficult to know exactly what to expect when traveling to another culture for the first time, especially when guidebooks are the primary means of preparation. Now that I have the experience of traveling to North Africa, I would like to travel back to Morocco and Tunisia with a more directed focus. There are many places I would like to revisit, many new places to travel to, more photographs to take, and more items to bargain for in the souks.

5. *Internet access was limited while abroad.*

There was Internet access in most of the cities we visited, but it was not consistent nor was it always a strong connection, especially at opportune times.

6. *Free time was limited while traveling.*

The itinerary was packed on a daily basis, which on the one hand was great since this was a first-time experience to a new culture, and there were so many things to learn in a structured setting. On the other hand, it was difficult to carve out time to reflect, do research, visit other cultural institutions, or shop. I usually over-schedule my own personal travel, so I welcomed the hectic schedule. But since I do try to cram in as much as possible, I still wanted more, especially more art.

7. *An overabundance of photographs can be overwhelming to categorize.*

I took over 6,000 photographs during the six weeks on the program. The photographs have proven to be an invaluable and rich resource for me in doing presentations, completing the curriculum project, and revisiting memories of the experience. But narrowing down 6,000 photos to a usable amount has been a long and difficult process. Ironically, I feel that there are some things I did not take photos of that I wish I did. That will need to wait until my next trip back.

I am listing these challenges not only because they were part of my process of writing this curriculum project but also because they are points that can and should be discussed with students. Traveling abroad has unique challenges that students should be aware of and be prepared for. What are other travel related challenges? How can they be prepared for, overcome, or addressed?

Curriculum Project

Pattern is everywhere in Islamic art, particularly in the architecture and the traditional arts. The images associated with Morocco are exceptionally rich in color, pattern, and design. This art is not static, and it is not a dying art. The art and design of Morocco and Tunisia is able to retain its artistic integrity by holding onto the traditional. It is meaningful to see the influence of Maghrebi art on modern artists of the West and in translating tradition into the contemporary art of Moroccan and Tunisian artists.

Goal of project: Students will come to understand the role of pattern and how it is incorporated into the art and design of Morocco and Tunisia.

National Standards in Visual Art addressed:

Content Standard #1: Understanding and applying media, techniques, and processes.

Content Standard #2: Using knowledge of structures and functions.

Content Standard #3: Choosing and evaluating a range of subject matter, symbols, and ideas.

Content Standard #4: Understanding the visual arts in relation to history and cultures.

Content Standard # 5: Reflecting upon and assessing the characteristics of their work and the work of others.

Content Standard #6: Making connections between visual arts and other disciplines.

Objectives: At the conclusion of this unit, students will learn:

- to discern the basic attributes of Islam.
- that pattern plays a large part in Islamic art.
- how to create basic geometric patterns seen in the art of Morocco and Tunisia.
- how to manipulate a variety of media used in Moroccan and Tunisian art
- that modern artists from Europe were inspired by their travels to the Maghreb, which influenced the color and composition of their art.
- to appreciate the use of pattern in a variety of media.

Essential Questions:

How does Islam relate to the art of Morocco and Tunisia?

Why teach about the Islamic art of Morocco and Tunisia?

What role does pattern play in the Islamic art of Morocco and Tunisia?

Where is pattern and design located in Morocco and Tunisia?

How did the art of Morocco and Tunisia influence Modern European artists?

The Role of Religion, Geography and History in the Art and Design of Morocco and Tunisia

Morocco and Tunisia are part of the Maghreb in North Africa, separated by Algeria, and both with access to the Mediterranean Sea across from Europe. The Sahara comprises the southern portion of each country. Morocco has the highest mountains in North Africa, with elevations higher than 13,000 feet. The mountain chains include the Rif to the north, and the Middle Atlas, High Atlas, and Anti Atlas in the center of the country.

The artwork and architecture of Morocco was influenced by its long and complex history, with the ancient cultures of the Phoenicians, the Carthaginians, and the Romans; the caravans traveling through Morocco from the north and south, and of course the spread of Islamic culture from the Arabs. The mixtures of cultures and religions have layered meaning in the pattern and design of Morocco. Artwork in rural Morocco tends to be influenced by Berber traditions, using simple geometric motifs such as diamonds, crosses, diagonals, and triangles. Artwork in the cities of Morocco shows influences from Andalusia, Jewish Spain, and Turkey with an emphasis on complex patterns, ornate arabesques, and calligraphy.

Being situated on the Mediterranean Sea across from Italy, but solidly connected to the continent of Africa, Tunisian culture and history has both northern influences from France and Italy and eastern Arabic and Islamic influences. Much of the early history of Tunisia involves possession and destruction of Carthage by some of the major groups that have inhabited the land in North Africa now known as Tunisia. The Phoenicians founded Carthage in 814 BCE. It was destroyed in the Punic Wars in 146 BCE, annexed by Emperor Augustus in 31 BCE, captured by the Vandals in 439, and then destroyed by the Arabs in 698. It was in the mid to late 7th century that Arabs migrated westward through North Africa establishing Islam. Kairawan was founded in 670 and was the capital in the Aghlabid dynasty from 800-902. Fatimid rule saw Mahdia as its capital from 902-1056. The Almoravids ruled from 1056-1147 and had Tunis as its capital, followed by the Almohads (1130-1269). The first indigenous dynasty was by the Hafsids (1296-1534). Foreign rule returned, briefly by Spaniards then Ottomans until Tunisia became a French protectorate in 1881. National independence was gained in 1956. Between 1957 and 2011, Tunisia had only two presidents (Habib Bourguiba and Zine El Abidine Ben Ali) before the Jasmine Revolution in January 2011. The first democratic election after the uprising was held in October 2011, with the moderate Islamist Ennahda party winning. (Summary of notes from the seminar during the Mounir Khelifa lecture, July 2011.) Research current political and cultural events in Tunisia. How has the revolution and subsequent elections affected the country?

Why Teach about the Islamic Art of Morocco and Tunisia?

An important role of education is to expose students to cultures different from their own in order to expand their perspectives and understanding of the world. The American Academy of Religion published Guidelines for Teaching About Religion in K-12 Public Schools in the United States, available as a PDF on their website. In it, AAR promotes the teaching of religious awareness that is constitutionally sound, which helps to combat widespread religious illiteracy and its subsequent consequence “that it often fuels prejudice and antagonism, thereby hindering efforts aimed at promoting respect for diversity, peaceful coexistence, and cooperative endeavors in local, national, and global arenas.” The guidelines for teaching about religion include an approach that promotes academic over devotional, awareness over acceptance, study over practice, exposure over imposing, education over promotion, and informing over conforming. Further suggestions and methodology can be found within the document.

Art education scholar Paul Duncum sees classes in art education as “crucial sites for discussion issues raised by global culture” where the study of visual culture (the functional interpretation of images, design, media, architecture, art, and film) can have a strong impact on how students envision their place in the world. Given the prevalence of stereotypes, misinformation and intolerance of non-Christian religions in the United States, especially of Islam, it is imperative to have a dialog for understanding. Showing complex imagery from diverse cultures, such as the art of the Maghreb, allows students to see the interconnectedness of a global society, helps broaden their experience and visual vocabulary, and promotes cultural and religious tolerance.

Focusing on the patterns and process of art making in Morocco and Tunisia also incorporates an interdisciplinary approach, enabling students to see the interconnectivity of art across all disciplines. Math is an exceptionally strong connection to the making of the geometric patterns.

Incorporating illustrated books into the elementary classroom allows students to see the connections between their culture and the culture of the Maghreb. Children’s picture books to incorporate include: *The Bachelor and the Beam* (2003) retold and illustrated by Shelley Fowles is a Jewish Moroccan folk tale; *The Most Magnificent Mosque* (2007) by Ann Jungman and illustrated by Shelley Fowles follows three mischievous boys- one Jewish, one Muslim, and one Christian- and is set in the Great Mosque of Cordoba, Spain; *Mirror* (2010) by Jeannie Baker. A wordless picture book, it compares the lives of two boys, one in Morocco and one in Australia; *The Butter Man* (2008) by Elizabeth Letts and Ali Alalou and illustrated by Julie Klear Essakalli depicts a father who tells his daughter of his Berber upbringing in the Atlas Mountains; and *My Father’s Shop* (2006) by Satomi Ichikawa follows a boy and his love for a damaged carpet in a Moroccan souk.

What is Islam?

Islam is one of the main monotheistic religions, and like Judaism and Christianity, it originated in the Middle East. It is the fastest growing religion- there are over 20 billion followers in all parts of the world, second only to Christianity in number of followers. Islam means “submission” in Arabic. A follower of Islam is a Muslim, or “one who submits to God.”

Mohammad is the last of the prophets of God. Other prophets who came before him include biblical figures such as Jesus and Abraham. Mohammed was born in 570 in Mecca, located in what is Saudi Arabia today. When meditating on the mountain in 610, Mohammad heard the first of many revelations of God and began preaching Islam in Mecca, asking believers to submit to the will of God. His preaching increasingly became more and more unpopular to the point of violence, so he left Mecca for Medina, a defining time in Islam that marked the beginning of the Islamic calendar. When Mohammad died in 632, four caliphs led the rapidly growing Muslim community. When the last of the caliphs was assassinated nearly thirty years later, the Muslim community was divided into the Shias (those who believed the next leader should be a descendent of the fourth caliph) and Sunnis (those who believed the next leader should be chosen by consensus).

The holy scripture of Islam is the Quran, where God’s word is written as it was revealed to Mohammad by the angel Gabriel. The word Quran means “recitation.” It was written in Arabic script, which is most revered.

The Five Pillars of Islam are:

1. Shahada: Statement of Faith
2. Salat: Prayer five times a day
3. Zakat: Giving charity to the poor
4. Sawm: Observance of Ramadan, or the period of fasting
5. Hajj: the pilgrimage to Mecca

The call to prayer, or adhan, occurs five times throughout the day: at sunset, nightfall, twilight, noon, and afternoon (exact times determined by the position of the sun). The muezzin calls out the prayer (often from a loudspeaker) from the minaret of the mosque, and includes the statement of faith (“There is no other god but God, and Mohammad is the messenger of God”), one of the five pillars of Islam.

There are numerous resources for teachers that explain Islam and its principles identified in the Resource Section that have an accessible overview of Islam. *Arts of the Islamic World Teacher’s Guide* by The Smithsonian Freer Gallery of Art and Arthur M. Sackler Gallery <http://www.asia.si.edu/explore/teacherResources/islam.pdf> in particular is an excellent resource on Islam with ideas on Islamic art. The Council on Islamic Education also has a great resource *Teaching About Islam and Muslims in the Public School Classroom* http://aai.3cdn.net/ceeecfb6bf1ff4950a_fjm6bebcj.pdf.

For more in-depth readings concerning the study of Islam, two books that were recommended to me are *The Heart of Islam: Enduring Values for Humanity* by Seyyed Hossein Nasr and *Islam: The Straight Path* by John L. Esposito.

What is Islamic Art?

- Islamic art is any art produced in a Muslim land.
- Few religious iconographic symbols.
- Focus on symmetry and repetition, and patterns are interlocking.
- No preference for deviation from established patterns.
- Figural depictions absent in the art of the Islamic world, known as aniconism) as the Qur'an warns against idol worship, but figures are not forbidden altogether.
- The application of highly abstracted imagery.

Major vehicles of Islamic art

- Architecture
- Arts of the book
 - Calligraphy, illustration, book art
- Arts of the object
 - Ceramics, metalwork, glass, woodwork, textiles

Three major types of design

- Calligraphic pattern
 - Emphasis on God's word
 - Most revered of the arts
- Arabesque
 - Means in the style of Arab
 - Abstract plant-like forms and floral motifs
- Geometric Designs
 - Repeated patterns to represent infinity
 - Circle basis for many of the patterns
 - There are three basic characteristics of Geometric Pattern (Metropolitan Museum of Art, 2004):
 1. There is a repetition of geometric elements based upon the line, square and circle placed within a grid of equilateral triangles, squares or hexagons.
 2. The designs are intended to be flat and two-dimensional.
 3. The designs are not constrained to a frame and can potentially be expanded to infinity.

Symbols- some of the basic symbols found in the patterns:

- Six-pointed star (double triangle) or eight-pointed star (double square)- Seal of Solomon
- Pattern of star and cross- Breath of the compassionate
- Spiral- universal symbol of cycle of life
- Arch, Doorway or Portal- the gateway to Paradise
- Hand- Khamsa or Hand of Fatima- offers protection, blessings
- Star and crescent moon- symbol of Islam
- Eye (representational or abstract)- evil eye
 - Several items are said to ward off the evil eye, such as an inverted triangle, the color blue, cowrie shells, the hand (khamsa) silver coins and jewelry.
- The number 5- seen in motifs such as the 5-pointed star and the khamsa- represents five pillars of Islam or the five daily prayers.

Geometric Designs

One of the major achievements of Islamic civilization is in mathematics. Plato, Euclid and Pythagoras were among the first translated into Arabic. Advances in algebra, geometry, and physics, and the use of Arabic numerals not only furthered continued development in the fields of math and science, but also were applied to the visual arts of the Islamic world. Many of the patterns have a significant mathematical component. (These patterns are beyond the scope of this project and will not be explained in this format. There are a number of books that help to explain the complexity of geometric structures through diagrams, overlays, CDROMS and step-by-step processes located in the Resources section.)

The circle, representing infinity, is the basis of most designs. Overlapping circles help to create other shapes, such as triangles, hexagons and stars, when straight edges connect the overlapping segments. This underlying structure of circles within a triangular or square grid creates order but is not obvious. The linear segments may also be interlaced, creating an under/over effect similar to weaving.

While the patterns are contained within a rectangular format and often focus on one main element, the pattern itself could repeat indefinitely, to infinity. Patterns can also transition from a geometric pattern (called *tastir*) to a more organic and leaf-like pattern (called *tawriq*). Plant forms are never represented realistically; a highly abstracted and stylized design is favored.

Geometry and angular forms plays an event more prominent role in the Islamic art of the Maghreb. In comparing Islamic art of other countries, the minarets in the Maghreb are rectangular and not round or octagonal, Moroccan domes are pyramid shaped and not rounded, and even the shoes are triangular as opposed to rounded.

Role of Ornamentation

According to Tilling (2001), ornamentation is the “elaboration of functionally complete objects for the sake of visual pleasure.” It is form over function, something that must be seen and analyzed in order to appreciate it, and something that favors labor intensive craftsmanship and planning over chance and spontaneity. Ornaments can be freeform, figurative, geometric, floral, ambiguous, or object based. All types of motifs can be found in the art and design of Morocco and Tunisia. Patterns can be identified as unitary (using a single motif), additive (numerous non-repeating motifs), repeating (same motifs in a predictable order), and hypotactic (differing motifs but some repeat and are organized in some way to form a pattern). Many of the patterns found in the art and design of Morocco and Tunisia included in this project are repeating and hypotactic.

While Jones never visited Morocco for inclusion in his seminal book *The Grammar of Ornament* (1856), he did chronicle Moresque design at Alhambra Palace in Grenada, Spain. Jones identified 37 principles of ornamentation. In the first principle “decorate construction, never to construct decoration” he stated that the Moors naturally adhered to that practice in every surface ornamentation created. Jones also noted that the motifs

based on nature were never direct copies or “too faithful representation.” Instead, they took the basic notions of nature by abstracting the form.

Creating Geometric Designs

The patterns found in the Islamic art of Morocco and Tunisia have a strong mathematical connection, and exploring the construction of these patterns will naturally integrate art and math. Basic constructions can be accomplished with a compass and step-by-step directions of the resources listed below. Team teaching with a math teacher could strengthen the cross-curricular connection.

Basic Color Patterns

- use a coloring book with complex patterns (see any of the Islamic Pattern Books in the Resource section.) Try different color combinations to create unique designs.

Intermediate Coffee Filter pattern

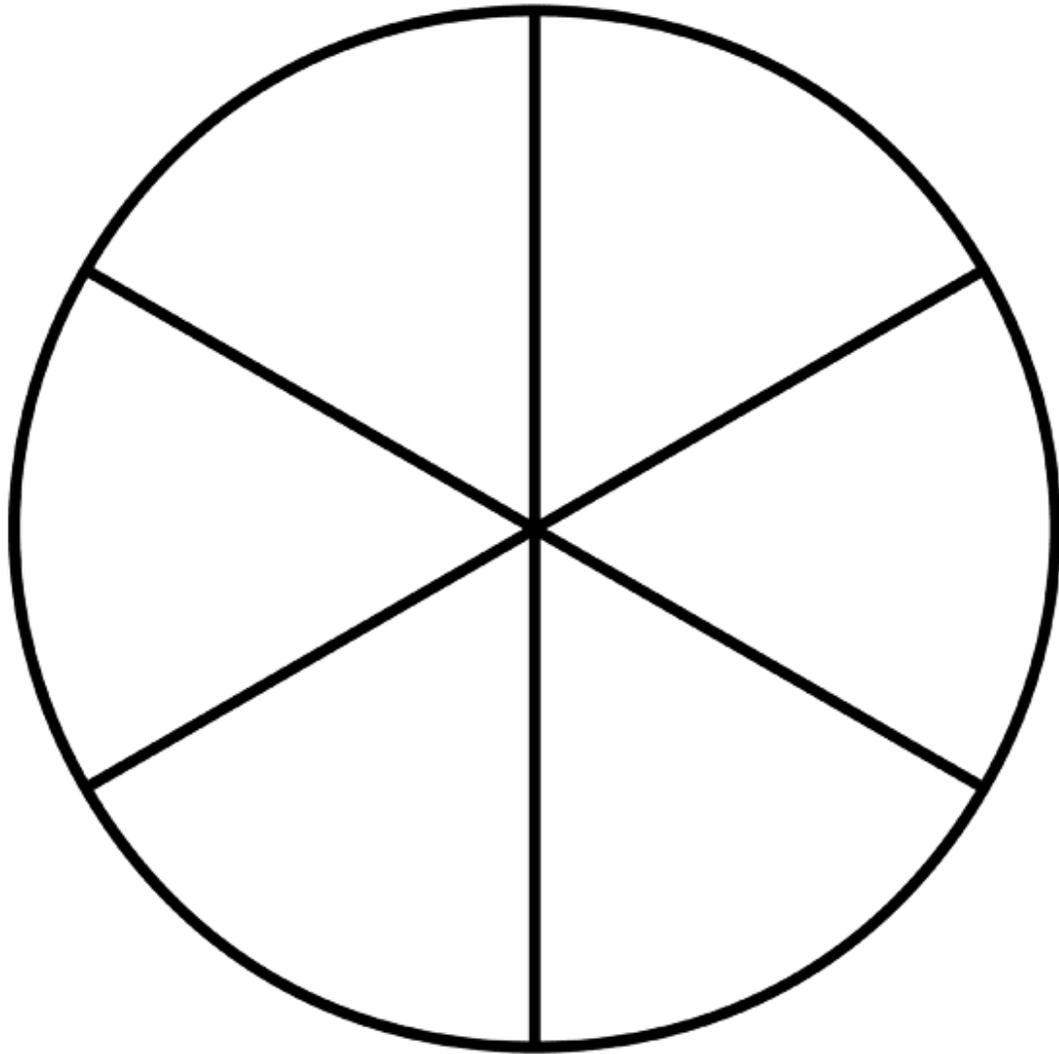
- Fold a round coffee filter in half. Fold the half into thirds, being sure to have all ends matching up. Use a marker (can be a permanent marker) to create a design on the folded filter. Let the marker soak through the filter to the layers below. Once the basic motif is drawn on $1/6^{\text{th}}$ of the filter, open it up slightly to see if the marker penetrated through to at least the third layer down. Retrace the motif again and again as the filter is opened and refolded, depending on where the pattern has soaked through. Color in the areas using water based markers or paint with watercolors.

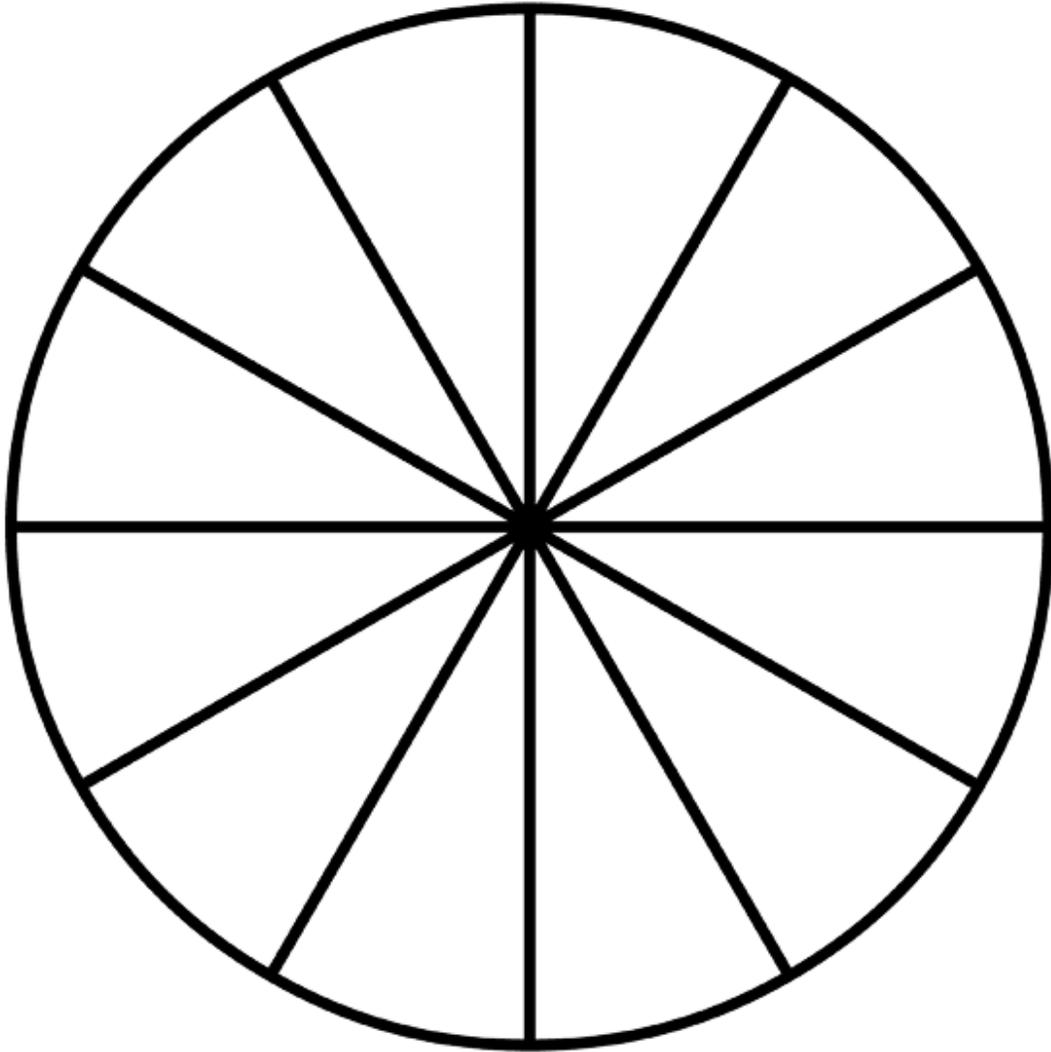
Intermediate and Advanced Design Complex Geometric Patterns

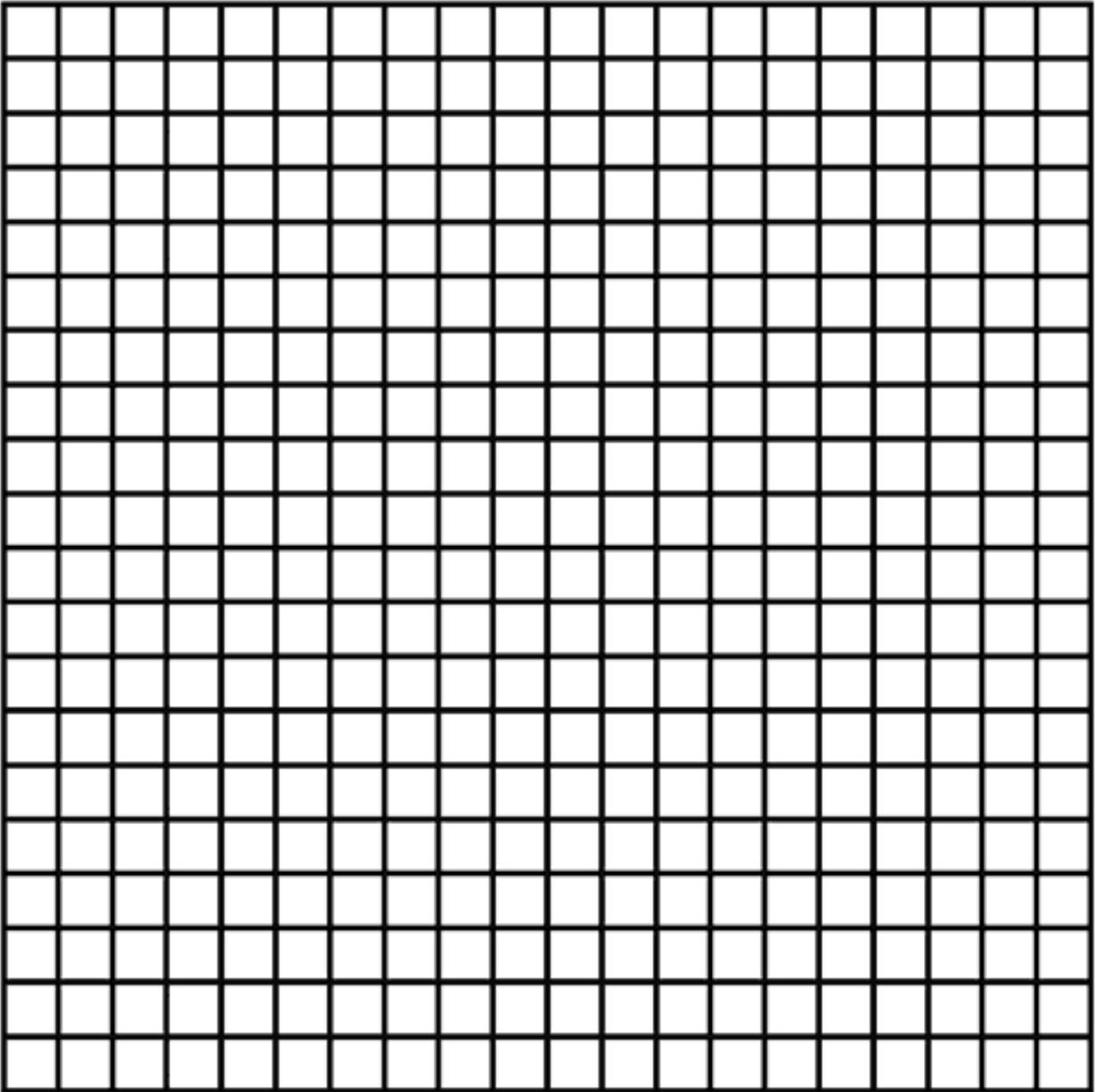
- For a more analytical approach, consult the resources located in the Resource section under “Educator Resources and Manuals” and “Geometric Patterns in Islamic Art.” An excellent on-line resource is *Islamic Art and Geometric Patterns* resource packet available from the Metropolitan Museum of Art, any of the first ten activities in the packet (pp. 10-37), using either a compass and ruler or the grids provided in the link. The next few pages in this curriculum project include circles divided into sixths and twelfths, square grids, and triangular grids. Create repeating patterns using one of those formats.

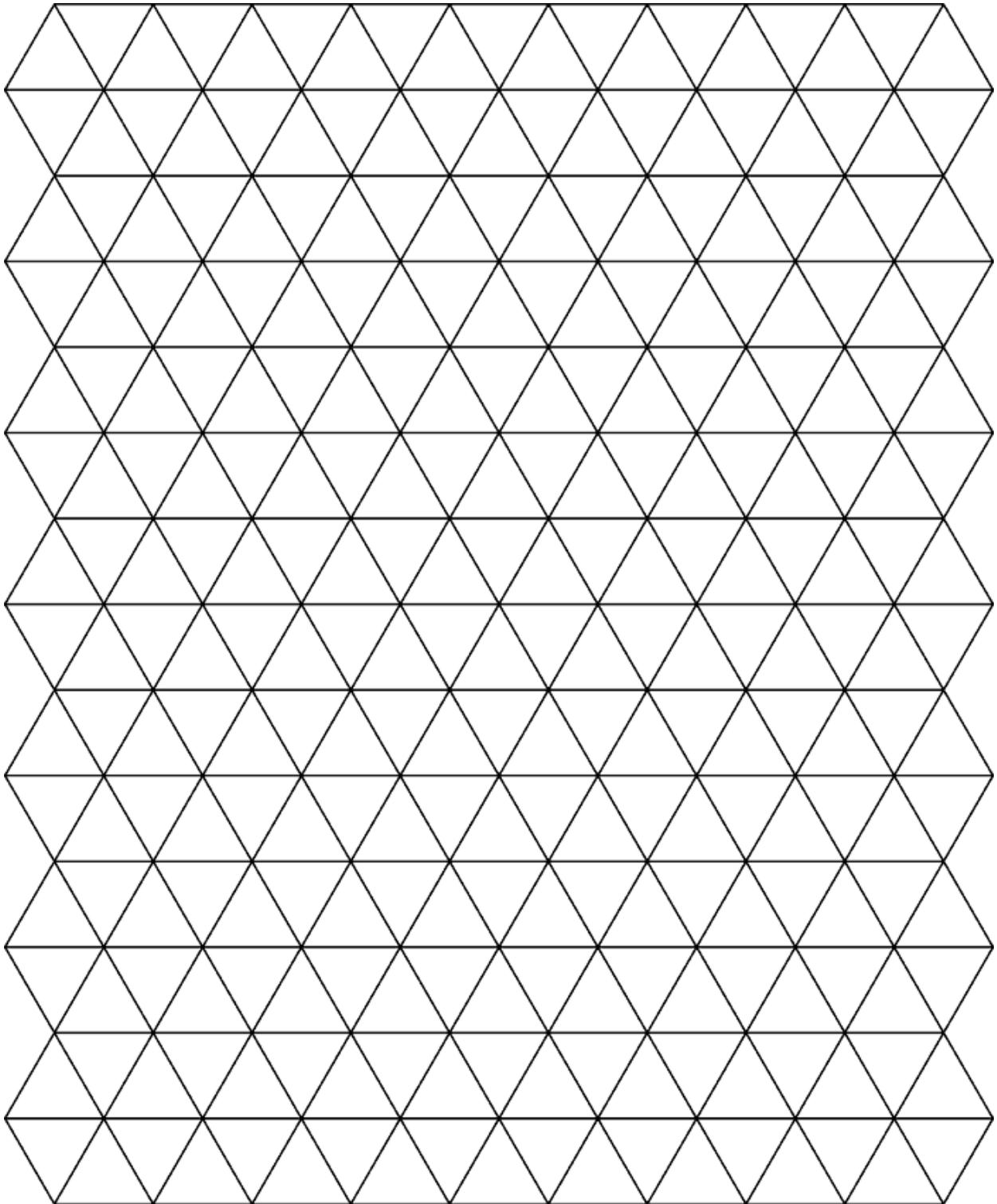
Advanced A Pattern in Print

- Create a tessellating design using the rubber stamp method. Draw a motif on paper within a 1”-2” square. Transfer the design to the same size eraser. Using a linoleum cutter and a craft knife, carve the design to create a relief block. Consider the negative/positive relationship of what will print. Use printing inks or stamp pads, print the motif in a grid pattern, altering the colors by row, column, or section. Or use water based markers to color the stamp in a pattern of colors and press down on slightly dampened paper to print.









Architecture

To access the Architecture visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20architecture.pdf>

In Morocco and Tunisia, residents in urban areas may live in the *medina*, a walled city that often includes a *mellah*, or Jewish quarter. The large *babs*, or gates, that allow entrance into the city once had large doors that were closed at night, offering additional protection for the residents inside. At the heart of the medina is the great *mosque*, which is surrounded by some of the best shops. The *souks* are arranged by medium, so all the weavers are in the same section, all the leather shops are near the *tanneries*, all the wood carpenters are in the same section, etc. Since the streets in the medina are often narrow, the main modes of transportation are walking, bicycles, mopeds, and donkeys.

Mosques typically have one of three plans: 1. simple format with a central courtyard surrounded by porticos, with more aisles on the qibla side (the side that faces Mecca); 2. the basilica style in the tradition of late Roman styles; and 3. the Ottoman style with a central dome. The minarets of the mosques in the Maghreb are rectangular in shape, as opposed to cylindrical or octagonal shape in the Ottoman style.

Of particular interest in Moroccan and Tunisian architecture are the juxtapositions of public and private space and of the industrious and the restful seen in the plain exterior with the highly ornamented interior space. Private space is kept exceptionally private. There are few if any windows that open up to the streets. Homes are built around a central courtyard or garden.

The book *Umn El Madyan: An Islamic City Through the Ages* is a fascinating visual journey of the evolution of a fictional North African city, from its earliest Paleolithic beginnings, to a Phoenician center, to a Punic-Numidian City at its peak, to a post-Carthage Roman occupation, to late Christian Antiquity, then longevity as an Islamic city to present day. During each phase of development as the city grows, new architectural features are added and defined. Pen and ink diagrams, drawings, and cross-sections help to explain these changes.

Below is a list of basic terms related to architecture and the built environment.

Medina – city

Mosque (masjid)– A place of worship for Muslims

- Courtyard
- Minaret – tower from where the call to prayer is announced 5 times a day
- Prayer hall – large open area in a mosque where Muslims pray
- Qibla wall – wall indicating the direction of Mecca and the direction Muslims should pray
- Mihrab – niche indicating the qibla wall
- Minbar – pulpit from which the imam (prayer leader) addresses the congregation

Medersa or madrasa – educational institution, usually a Qur'anic school

Zaouia – dwelling or mausoleum of a marabout (saint)

Mausoleum

Souk – the shopping area

Bab – gate or entryway into the walled medina

Ribat – monastic fortress

Kasbah – citadel or fortified area

Ighrem or **ksar** – a fortified granary

Fonduq – hotel or inn

Hammam – Turkish bath

Dar – house with a central patio-based courtyard

Riad – house with a central garden in the courtyard

Doors – Unique painted and/or studded doors hint at the interior within the rather plain exterior

Doors

The doors and doorways in Morocco and Tunisia are striking. Round arches, horseshoe arches, multifoil arches, and rectangular shaped doors and doorways in yellow, red, green, blue, tan, white, striped, and polychrome colors. Patterns are carved, stenciled, and otherwise designed on both the doors and around the doorframes using wood, metal, tile, stone or paint. Even in the similarity of the renown blue doors of Sidi Bou Said in Tunisia, no two doors are alike.

Doors are typically the only indication of the personal lives of the inhabitants inside, as their private lives are kept incredibly private. Traditionally, only Jewish homes located in the mellah of the medina had balconies- no Muslim home would have such exposure. The façade of the home may have a rather plain exterior with the exception of the door, while the inside of the riad or dar, the home may contain sumptuous fabrics in the banquet, decorative tile work on the floor and walls, and the carved plaster or woodwork on the ceilings, windows and walls. The design of the doors can indicate financial status, interests, personalities, and number of family members.

Symbols, motifs, and repeated patterns can adorn the doors. Studded nails can create fish, arrows, flowers, stars, and crescents. Patterns in paint can be hand applied or stenciled onto a smooth or carved wooden door. Doorknockers and hinges can also contain motifs- the *khamsa*, or hand of Fatima, is a popular symbol indicating protection, and blessings.

The doorways around these doors, as well as the arches of windows, fountain niches, public buildings, and *babs* (gates to the medina) are often ornamented with pattern. These designs can contain arabesques, calligraphy and/or geometric pattern. Designs can be carved stone or plaster, mosaic tesserae, excised tiles, ceramic tiles, painted or carved wood, or organic *muqarnas*.

Look at the handout of Doors and Doorways on Dropbox

<https://dl.dropbox.com/u/54970004/Patterns%20of%20Complexity%20photo%20handouts%20doors.pdf> the door section of the PowerPoint, or photos of doors on a photo-sharing site such as Flickr.

Creating pattern with Doors

Basic Designing Doors

- Create a door design using paper or foam core cut in a rectangular format to replicate the outside doorway. Decide on the color and what shape the doors should be- arch, horseshoe arch, multifoil, or rectangular. Since the doors are typically symmetrical, fold a piece of paper in half and draw the design beginning and ending on the fold. Cut out and paste onto the larger paper or foam “doorway.” Use a variety of materials to replicate the iron nails used for the patterns- sequins, craft foam circles, or buttons, or use a glue bottle to “draw” textures (be sure to dry flat).

Intermediate The Incredibly Shrinking Doors

- Shrink plastic is an interesting material that creates miniature drawings with a dimensional thickness. To create miniature doors, cut a piece of clear shrink plastic in half or quarters depending on the final size you want the doors to be. Either trace a doorway using copies of the handout or from photos on Flickr or the PowerPoint OR draw the doors freehand. Use a thin black permanent marker to draw an outline of the door and the design details on the front side. On the other side of the plastic, add color to the doors. Use colored permanent markers, or if using colored pencils, first evenly roughen up the surface with fine grit sandpaper. Shrink the plastic according to package directions.

Advanced Doors in Print

- Create a relief print of a Moroccan or Tunisian style door. Use linoleum cutters to cut out the design on linoleum or easy cut printing blocks. Each member of the class should have the same size block, and each student should align the block in the same format (typically vertical). Use an uncut block to print a solid color onto a sheet of paper using printing ink. Print the cut door design on top of the colored portion using black or a darker color ink, being sure to properly register the blocks for correct alignment. Blocks can be printed individually or can be part of a large class project where multiple doors can be printed next to each other on one sheet of paper.



Arts of the Book

Calligraphy and the Arabic Language

To access the Calligraphy visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20calligraphy.pdf>

The Quran, meaning “recitation,” is the holy book of Islam. Arabic script is the language of the Quran, so Arabic script adorns the book arts as well as architecture and arts of the object with verses from the Quran.

Arabic script is proportioned, relative to the circle. The first and most fundamental letter is alif.

Many patterns in architectural spaces contain calligraphic inscriptions incorporated into all media. Inscriptions include Islamic poetry, sayings from the Prophet Mohammed, or verses from the Quran, particularly the *bismillah*, the first verse of each chapter of the Quran, which is also said in the daily prayers and as a blessing. Historically, the *kufic* style was used, which was very angular and boxy. Contemporary calligraphic inscriptions may be in kufic, preferred for its decorative function, or in more curvilinear cursive styles.

The first two weeks of the program was spent learning Arabic and the Arabic alphabet at Qalam wa Lawh in Rabat, Morocco. It was intensive to learn the basic sounds, letters, words, and simple phrases. Arabic is read from right to left, and books open from the left side.

The chart on the following page is adapted from a handout given from Qalam wa Lawh and contains simple greetings. (Qalam wa Lawh translates to “pen and board.”) Practice saying some of the basic words and phrases in Arabic. Web sites like Google Translate will help with the pronunciation.

| Transliteration (How to pronounce it using letters in English as an equivalent) | Translation (What it means in English) | Arabic Script (How it would be written in Arabic) |
|--|--|--|
| Ssalamu alaikum | Peace be upon you (said when greeting someone- it's like hello) | السلام عليكم |
| Wa alaikum ssalam | And peace be upon you (said in response to the above) | والسلام عليكم |
| Ana isme... | My name is.... | أنا اسمي |
| Ma ismuka? (ismuki) | What's your name? (to a boy/girl) | ما اسمك |
| Na'am | Yes | نعم |
| Laa | No | لا |
| Mumkin | Maybe | ممكن |
| Min fadluka/fadluki | Please (to a boy/girl) | من فضلك |
| Jayyid | Good | جيد |
| Shukran | Thank you | شكرا |
| Sabah al-khair | Good morning | شكرا لخير |

Creating pattern with Calligraphy

Basic Practice writing the Arabic alphabet.

- Use a commercially available book on learning the Arabic alphabet or find the Arabic alphabet on the Internet. (Stanford has a great chart to use with audio pronunciations as well)
- Learn the Arabic words and pronunciation for the basic colors. (Omniglot has a very useful chart of the basic colors in dozens in languages.)

Intermediate Calligraphy using a Bamboo Reed

- Bamboo calligraphy reeds are often used to create the Arabic script. Use a bamboo reed and India ink to create your name or phrase in calligraphy. This can be done in English, or for an extra challenge, write it in Arabic (use Google Translate for help in translating from English to Arabic). Add embellishment, such as arabesques.

Advanced Abstract Designs

- Create an illuminated page. Choose a text or phrase important to you, such as verses of poetry or lyrics from a song. Using good quality paper, mark off the main area where the text will be written. Then indicate a series of borders around the text. Carefully write the text in the main area using pen and ink or a thin marker. Stylize your writing if desired. In the border sections, create a series of patterns, both arabesque and geometric. Include the title of the poem or song somewhere in the border, but abstract the writing so it becomes part of the design. Use watercolor pencils for the borders, incorporating areas of translucent wash with areas of defined dry line.

Arts of the Object

Studio arts and training

According to the study done by Pinto and El Bekay (1998), elementary art education in Morocco is present, but depending on the financial resources of the school, may be lacking in materials as well as the quality of the teacher. Students create works based upon Islamic design principles but also create genre scenes as well.

For post-secondary learning, schools offer specialized training in a particular craft area. In Fès, Morocco's art capital, there is a school for learning the traditional arts of Morocco, Le Centre de Formation et de Qualification dans les Metiers de l'Artisanat (The Center of Training and Qualifications in the Fields of Handicraft) that prides itself in its focus on craftsmanship. The school focuses on career development and marketability of its graduates. Center objectives include creating skilled craftsmen, ongoing training tailored to the needs of the market, and eliminating the threat of extinction of these methods. Media and techniques focused on include embroidery, shoe-making, leather working, jewelry, carpet weaving, plaster carving, pottery, and zellij. This helps to ensure that the appreciation and traditional methods of making these handicrafts will continue through new generations of artisans. As translated from French to English in their brochure, their goal is to "modernize an industry that has to fight constantly against the archaic clichés." (To learn more about the Center of Training and Qualifications in the Fields of Handicraft in Fes, conduct a search for the center. All documents found, including an informative PowerPoint, are in French, but a translator site on the Internet can easily translate the information.)

What do you think some of these "archaic clichés" are? What are some stereotypes or general assumptions of traditional Moroccan art and handicrafts? Even in the United States, the crafts media, such as jewelry, weaving, and pottery, often have negative stereotypes and are seen as lesser art form than the fine arts of painting and sculpture. Why do you think that is? Other questions to explore: the idea of traditional craft versus creating new types of art for a contemporary market; folk art versus fine art; traditional methods versus modern technology; and art placed in its original context versus art removed and placed in a museum.

A master craftsman is called a "maalem." Motifs in crafts are sometimes passed down through a family as the younger generation learns the trade. According to a maalem in *Traditional Islamic Craft in Moroccan Architecture*, "The maalem is a poet who does not write on demand. He uses nothing but the humblest materials, some colour in tin cups, usually cast-off ones, a few rudimentary brushes, for what is required is imagination but imagination knows no enemy but time" (vol. 2 p. 261).

Mosaics

To access the Mosaics visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20mosaics.pdf>

Mosaics have a long history in both Morocco and Tunisia, predating the arrival of Islam by more than seven centuries. Using tesserae (small tiles) of stone to make representational imagery as well as patterns was popular by the Punic, the Phoenicians, and the Romans all around the Mediterranean Sea, though Tunisia is said to have the most abundant, finest, and diverse selection found in numerous locations. It was a popular and practical art medium in the ancient world, and most private homes and public baths included mosaic flooring. Early mosaics were rather simple, done in bold geometric shapes, and used mostly black and white tesserae. By the third century BCE, mosaics were more figurative, detailed, and colorful, and subject matter included mythology, nature, and still life. By the late fifth century, patterns in mosaics were either under a traditionalism theme of simple geometric designs in a limited color palette, or a new elaborate style related to Byzantium. The more elaborate mosaics usually indicated a higher economic and social class. While the mosaics in Morocco were diverse, they did not follow the style set by Tunisia and were primarily found in just two locations, including Volubilis, which is west of Fes.

Excavations of mosaics in the mid twentieth century and earlier favored the highly detailed and representational imagery, and these works were removed from their original locations and placed in museums, such as the Bardo in Tunis. Current archeological practice has expanded and now includes the study and conservation of geometric designs as well. Studying the mosaics in context of their original location is important, but in order to preserve the mosaics once they are unearthed, the mosaics are often removed and placed in museums since environmental hazards such as pollution and frost threaten their permanence.

Like many traditional crafts in the Maghreb, there is a revival of learning mosaic techniques as both a trade to sell and for the conservation of ancient mosaics. Once such workshop in El Jem employed young women to create both small and large scale mosaics available for purchase in the shop adjacent to their studio. Representational subject matter is appropriated from the ancient mosaics found in museums such as the one in El Jem. The indirect method of mosaic making is used. Strips of stone in a variety of colors are cut in small pieces then glued onto paper following the pattern in the original mosaic in reverse. A cement mixture is then applied to the back of the mosaic. Once dried, the paper that is now on the front of the mosaic is dampened and peeled off revealing a flat surface of the tesserae. (The direct method is similar to how tile is laid, where tiles are placed down directly and adhered to a backing. The tesserae may be uneven, though, on the surface.)

View the examples of Moroccan and Tunisian mosaics on the PowerPoint Patterns of Complexity. How do the styles from each country differ? How are they similar?

For an up-close exploration of Tunisian mosaics, explore the extensive collection at the Bardo Museum in Tunis. While the English version of the site may not be operational, the home site in French is still very accessible. (Use an on-line translator if needed.) A great feature is the virtual tour of the galleries. <http://www.museedebardo-tunisie.tn/test/presentation.php#> Describe one of the mosaics in detail. What is the subject matter? How is pattern used?

Creating pattern using mosaics

Basic Foam or Paper Mosaic

- Use craft foam or colored paper to create a mosaic, which is either cut by hand or purchased in already cut mosaic size pieces. Draw an object with a simple outline on cardstock or mat board. Fill the background with a pattern of mosaic pieces. Be sure to glue the pieces very close together.

Intermediate: Simple Direct Mosaic Tiles

- Use a 4-5" ceramic tile as a backing. Trace the tile on a sheet of paper to use as guidelines in planning the design. Use pre-shaped ceramic and/or glass tiles and arrange within the guidelines on the paper to plan the design. Keep tiles as tight together as possible. Once a pattern is determined, spread a layer of thin set adhesive to the backside (non-glazed side) of the 4-5" ceramic tile (about 1/8" deep). Carefully transfer the tesserae on to the thin set, again, keeping the tiles tight.

Advanced: Mosaic using the Direct Method

- Use the direct method. Obtain a support for the mosaic piece (plywood cut to size or even a cabinet door would work). Design the mosaic with a single motif or a repeating geometric pattern. Use pre-made ceramic pieces, 1" porcelain tile, 3/4" vitreous glass tile, or pebbles. Cut with mosaic nippers if needed. (Smaller ceramic and glass tiles are desired due to the ease of cutting with mosaic nippers. Other materials, like glass sheets and larger ceramic tile, can be used but will require additional tools to shape to size.) Use PVA glue to adhere pieces to the wood surface. Use pre-made mosaic grout or mix powdered grout and spread across the mosaic, being sure to get the grout in the crevices of the tesserae. Carefully wipe grout off the surface of the mosaic. Let dry. Buff tesserae with a dry cloth to polish.

Zellij tilework

To access the Zellij visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20zellij.pdf>

The art of zellij emerged out of the traditions of ancient mosaics and the tilework of the Merinids and of Andalusia. Zellij are tile patterns that create tessellations, interlocking patterns that have no foreground or background, no negative or positive space. While certain parts of the tile work are larger and radiate from a central point, most designs are afocal and do not have a focal point.

Zellij tiles are enameled, or glazed, ceramic tiles installed on a wall. (Floors have *bejmats* and roofing uses *qermuds*.) They begin as 10 x 10 cm (almost 4 inch) ceramic tiles that are glazed in solid colors. The desired zellij shape is traced with white ink onto the tile numerous times using another ceramic piece already cut as a guide. The tile worker then uses a hammer called a *mangash* to chisel each zellij piece, called *frem*. (Each frem shape has its own name. See the To create a finished zellij piece, the frem are placed enamel side down (done in an indirect method), either free hand for simple patterns or using a grid as a guide for a complex works. Once the pieces are in place, plaster and cement are shaken on the back of the frem and then water is sprinkled on top to help adhere the pieces together. Mortar is then poured over the panel and spread evenly across the work. Once dried, the zellij panel can be turned over to reveal the pattern. The zellij panel is set into the wall using a plaster adhesive and mortar. In Tetuan in northern Morocco, the zellij is made differently. Pieces are cut while the clay is still malleable, before being bisque fired. The traditional artisans from Fes look down upon this way in favor of chiseling the shapes after the tiles have been fired.

Traditionally, only black, white, dark green, turquoise, blue, and yellow ochre were used. Today, an open polychrome palate is used.

There are approximately 200 shapes that are used in the zellij patterns. The shapes seen in one of the zellij designs from the Palais Bahdia in Marrakech along with the names of each frem shape are shown in the handouts on the next two pages.

Creating pattern using zellij motifs

The book *Islamic Design: A Genius for Geometry* by Daud Sutton has instructions for making a puzzle set of shapes to create complex patterns. Plastic lids or cardstock can be used to create a classroom set of stencils of each piece.

Basic Precut patterns

- There are numerous types of prefabricated geometric shapes in plastic, wood, and paper. If already prepared geometric shapes are not available, cut your own in paper using your own stencils, an Elison machine, or from templates like the Zellij Pieces on the next page. Explore and manipulate the pieces to create a pleasing pattern. If using paper, glue the pieces down to another sheet of paper or cardstock.

Intermediate Clay Relief

- Flatten air-dry clay and cut into a tile shape. Choose one of the linear patterns from the Islamic pattern books from the Resource section or choose one of the zellij patterns from slides of the PowerPoint "Patterns of Complexity: Zellij Outlines" Place a clear plastic bag (sandwich or gallon, depending on the size) on top of the pattern and trace with permanent marker. Then place the plastic bag on top of the air-dry clay and re-trace the design to impress an outline into the clay. Let dry and paint with acrylics.

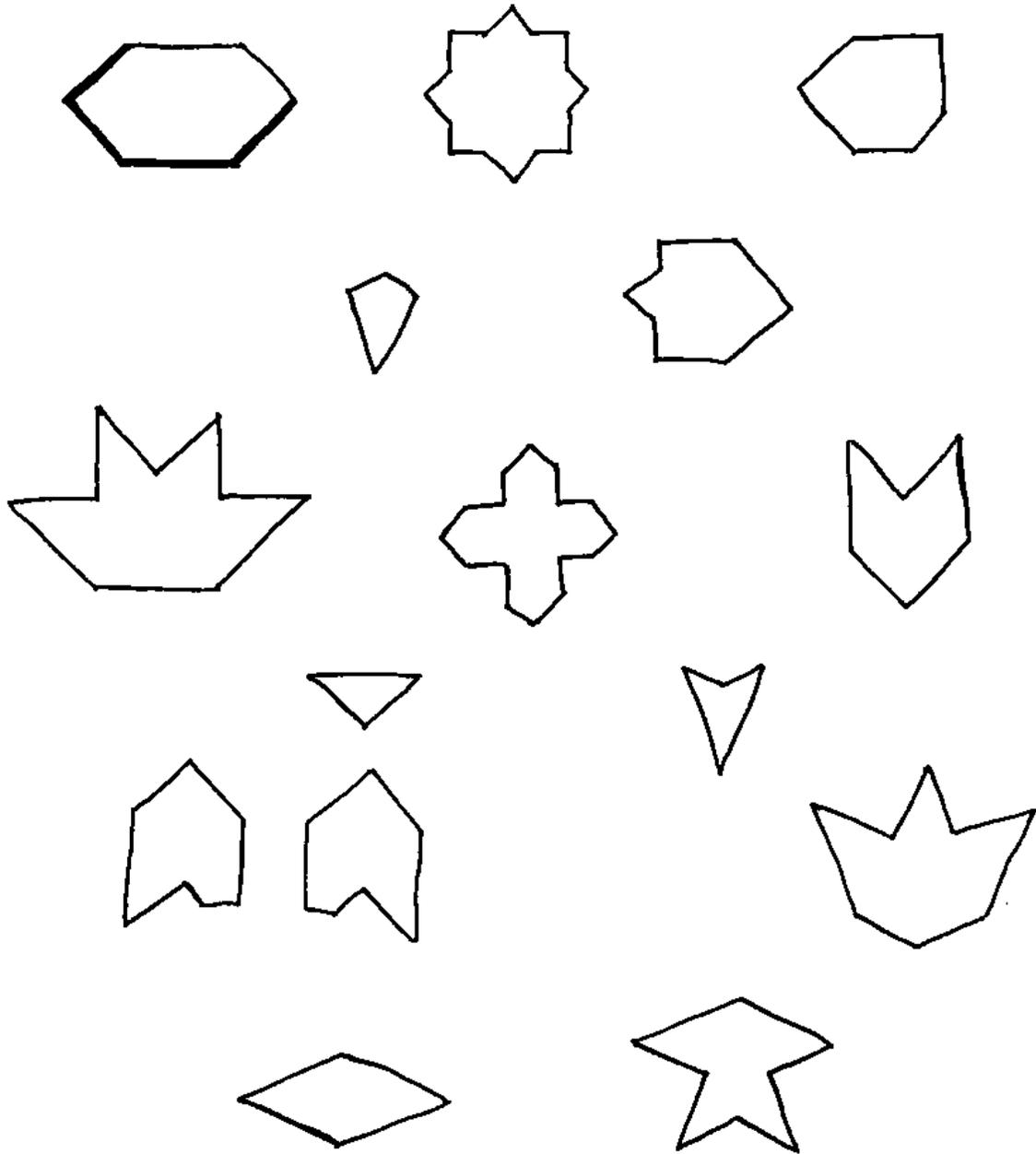
Advanced Zellij, Tetuan style

- Tetuan zellij makers cut the frem out of clay while the clay is still wet and unfired. Choose a zellij pattern from the geometric patterns coloring books or from the examples of zellij on the PowerPoint, or create your own pattern (see the section on geometric patterns). Be interesting with the design, but be careful to not make the design too complex with hundreds of shapes, as you will be cutting out each individual piece! Color in your design- this will help guide the glazing process later. Roll out the clay to an even thickness, and cut each shape out separately. Make sure you have cut every piece you need for your design. Let dry, then fire. Glaze keeping in mind the color scheme you have decided upon.



Zellij pieces from Palais Bahdia, Marrakech, Morocco

All from traced from a photograph, included on the next page with the names of each piece





Palais Bahdia, Marrakech, Morocco

Ceramics

To access the Ceramics visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20ceramics.pdf>

In Morocco and Tunisia, ceramics and pottery are found on the walls as tile work and in the homes as plates and vessels. (Traditional pieces include dishes, bowls, amphoras and jugs.) Ceramics can be monochrome or polychrome. Blue, green, and yellow ochre are historically common colors.

Urban style is influenced by Andalusian art. Ceramics are glazed and decorative, perhaps using sgraffito, and typically thrown on the wheel by men. Rural style is more utilitarian and is typically unglazed pottery. If the pottery is made by women, it is usually hand-built using the coiling method. Men use a wheel to create the vessels, and men typically add pattern based on assistance and suggestions from the women.

Since Fes has traditionally been the center for arts in Morocco, it continues to have importance in the role of ceramics as well. Ceramics in Fes is urban and are made by men in workshops. Ceramics can be broken into architectural ceramics that are part of buildings (such as zellij) and domestic pottery, subcategorized as household crockery for strictly utilitarian use and painted ceramics that have both geometric and floral designs. Calligraphy is rare in Fassi ceramics. Today, production in ceramics has transitioned from the predominance of domestic pottery to tile making for the zellij production.

In Tunisia during the 13th to 15th centuries, ceramics were inspired by Andalusian techniques of separating enamel application. In the 17th and 18th centuries, Turkish Anatolian styling and processes further influenced ceramics. This time period marks the height of Tunisian ceramics known as Qallalin. Ceramic tile production continues to reference this period in its subject matter and coloring of browns, blues, creamy whites, and greens. Subject matter consists of abstract and stylized representations of Ottoman styled domed mosque or a large bouquet of flowers, spilling out from its vase. Tiles are in a variety of sizes, from 6 to 20 cm, and have numerous tiles put together to form the design in a grid format. Tiles are traditionally incorporated into the wall rather than on the floor.

For rooftops, clay is thrown on the wheel into a cylinder, then cut in half, shaped slightly, then left to dry outdoors. Each piece is then fired then enameled with green glaze.

To obtain the clay for ceramics, it is quarried, typically from local sites. The dry clay is put in water for a day, and then workers knead the clay by walking on it in circular steps until it is completely mixed and ready for the potter's hands.

Creating pattern using clay

Basic: Paint a Tile

- Use an unglazed bisque tile. Using underglazes, paint a single animal shape in the center of the tile. Add a repeated motif at each corner. Glaze.

Intermediate: Design a Tile

- Use pencil to draw a design on an unglazed bisque tile. Designs should follow a geometric pattern. Designs drawn in the geometric section can be used. (Either enlarge designs to fit on the tile or transfer the design. To transfer, use a transfer paper or create a monotype by painting over the design with an underglaze, dampen tile lightly, then invert the painted paper onto the tile and press- design should transfer.) Use underglazes to paint in the design. Glaze.

Intermediate and Advanced: Multi-Tile Mural

- Use 6 to 12 unglazed bisque tiles. Or make your own tiles by rolling the clay to a consistent thickness, cutting each tile to a uniform length and width, and carving out a few lines in the back of each tile to allow it to dry more quickly. Arrange the tiles into a grid, and decide on an abstract motif to use (flowers and architectural designs are traditional Tunisian motifs). Use underglazes to paint the central motif and the border pattern of geometric shapes or arabesque patterns. Glaze.

Advanced: Ceramic Research

- Research the different styles and shapes of pottery in the various regions. In Morocco, research pottery from Safi, Fes, Meknes, and Sale. In Tunisia, research pottery from Nebeul, Sidi Bou Said, Kaiouan, Guellala, and Djerba. In both countries, research Berber pottery. Write a one page description of the motifs, colors, and shapes used in that area, and include visual images if possible. Create a work that reflects the region's stylistic pattern and shapes.



Plaster Reliefs

To access the Plaster Carving visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20plaster.pdf>

Plaster reliefs, or *gebs*, are all carved entirely by hand in Morocco, unlike plaster molding in Western countries that is usually prefabricated. Carved plaster can be found on ceilings and the upper part of walls, doorways, and columns, often directly above zellij tile as a frieze. Typically leaf-like, *tawriq*, patterns and calligraphy are the primary motifs.

It is said that Moroccan plaster dries slower than industrial plaster, allowing the artist, or *ghabbar*, time to carve the design, dampening it slightly with water when necessary. Plaster of Paris, or gypsum plaster, is mixed one part plaster to two parts water and is mixed by hand to make it smooth. It is also applied by hand about 3 to 4 cm thick to the support surface of its intended location, usually onto the wall or ceiling. It's smoothed out and then leveled with trowels, scrapers, and spatulas. Once dried, the design is transferred to the surface using powdered graphite pounced over a stencil. The darkened areas are the first to be carved away. Designs can be in shallow or high relief. Ordinarily white, *gelb* in Marrakech has a rosy tint to it due to the red clay content. *Gelb* may also be purposefully colored when completed, either by gilding certain areas or by painting the entire surface area, which is frequently done in Marrakech.

Some plaster carvings incorporate glass, called *chemmassiat* (*chem* means sun in Arabic). In *chemmassiat*, the plaster is carved all the way through in certain parts, and colored glass is inserted to the back, allowing light to filter through.

Muqarnas can be created using plaster or wood. Muqarnas are stalactite looking designs that cascade around a mihrab or doorway, giving the appearance of going upwards to heaven. In the Maghreb, muqarnas are structured around a geometric structure of eight.

Creating pattern by carving

Basic Plaster Casting

- Create a plaster relief cast out of a clay mold. Ball up a fist full of clay, and then flatten to a 1" thickness. Make indentations in the clay to make a pleasing design using clay tools, Popsicle sticks, shells, plastic texture panels, or any other material. Be sure that none of the marks are undercut or are too thin (plaster poured into a thin mold can be as sharp as a knife). Once the design is set, create a 2" high clay wall around the perimeter of the clay. Mix Plaster of Paris according to the package directions and pour into the clay mold. Let set for at least two hours. If it has to sit overnight, wrap up the plaster/clay mold with a plastic bag so the clay will not dry out. Peel back the clay from the plaster. Paint if desired with watercolor.

Intermediate: Subtractive Sculpture

- Instead of carving plaster, which can be difficult to carve, use a bar of soap or balsa wood. Plan an arabesque design in a shallow relief sculpture. Carve the soap or wood using basic tools. Plastic knives and clay tools work remarkably well.

Advanced A Reverse Chemmassiat

- Instead of carving plaster and adding glass to the back, this process requires using a clay mold and adding plaster last. It is similar to the Plaster Relief described in the Basic project. Use a small mound of clay. Flatten in whatever shape desired to a depth of 3-4" inches. Keep 1-4 areas as is- this will be where the glass is placed- and keep a 1/2" thick wall around the perimeter intact. Hollow out the areas around that, creating pattern and design using clay tools. Mix Plaster of Paris according to the package directions. Pour into the mold, being sure to stop when the plaster reaches the clay height. While the plaster is still wet, carefully add cut pieces of colored glass to the clay pedestals, being sure that part of the glass is secured in the wet plaster. Let plaster dry, then peel back the clay carefully.

Metalwork and Jewelry

To access the Metalwork and Jewelry visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20metalwork.pdf>

A variety of metals are incorporated into the patterns of Morocco and Tunisia. Brass, bronze, and copper are the metals most often used for architectural ornamentation (doors, roof spikes, chandeliers) and interior objects (trays, vases, oil lamps). Ironwork is considered a lesser material, but is still incorporated into the architectural framework as grillwork on windows and nails, panels, and hinges on doors.

Techniques used on jewelry and utilitarian pieces (door knockers and hinges, trays, and bowls) include casting, forging, and chasing and repoussé (hammering on one side to emboss and engrave, and then pushing out the metal from the other side to create a low relief). Jewelry can also be enameled, filigreed, and set with stones.

Jewelry in urban areas shows an Arab influence with other influences in Jewish traditions. This jewelry is typically gold or gilded, is very symmetrical, applies by geometric and organic patterning, and can include delicate details. Rural jewelry is in silver, as Berbers prefer silver rather than gold, which has associations of being evil. There is a saying that if someone is a good-hearted person, they are “silver.” Necklaces, bracelets, and fibulas are among the most important pieces of jewelry, used for adornment and for ceremonial purposes. Fibulas are the most utilitarian pieces; they are pins that fasten scarves and garments and are often in a triangular shape. Necklaces and bracelets can include beads, which are strung by women. Men traditionally work with silver.

Creating pattern in Metal

Basic Design a Charm

- Similar to the metal embossed khamsa (hand of Fatima) hanging in shops and taxicabs, create a charm that is symbolic to them of good luck, blessings, or protection. Plan your design- what brings you good luck or blessings? What helps to protect you? Cut a rectangular or circular shape out of the metal tooling foil. Place the foil on top of a magazine to help create a deeper impression. Draw your symbol on top of the foil using a dull pencil to emboss it. Flip the charm over and press out in certain areas to create a three-dimensional effect. Add dots and repetitive lines to create texture. Punch a hole at the top and add string and beads if desired.

Intermediate Create a Door Panel

- Doors in Morocco and Tunisia sometimes incorporate metal panels to the surface. Cut a 5” square in silver, copper or brass metal tooling foil. Create a geometric design on a separate sheet of paper, perhaps the same design created in the Geometric Designs section. Place foil on top of a magazine, and place the paper drawing on top of the foil. Tape down so the drawing does not

move. Trace over the design carefully with pencil, pressing hard. Remove paper and retrace the design to further emboss the metal.

Advanced Create a Fibula

- Berber jewelry is renowned for its beautiful geometric design and use of silver. Fibulas are used in both rural and urban environments. Create a fibula in the style of Berber jewelry. Look at a variety of Berber jewelry, including necklaces, bracelets, and fibulas. What are some of the characteristics of Berber jewelry? Design a simple fibula using purchased or polymer beads you designed. Use approximately 8-10" of 14-16-gauge sterling silver wire or craft wire. Create a loop at one end with needle nose pliers and curl it back to create a catch. Add beads or other charms to the wire. Loop the opposite end of the wire to create a safety pin type spring. Fasten the end of the wire underneath the initial loop you made. Cut off any excess wire. File the end of the wire to create a sharp point that can pierce clothing for fastening.

Wood painting

To access the Wood Painting visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20wood%20.pdf>

Cedar from the Atlas Mountains is the preferred wood in Morocco due to its rot proof nature, perfect as well for the steamy hammams.

Wood can be carved or painted (*zwaq*). Some Moroccans believe wood is not finished until it has been painted. *Zwaq* emerged out of a tradition of illuminated manuscripts (see the Calligraphy section for examples of decorative works on paper.) Some *zwaq* is solely geometric, while others incorporate organic motif, such as a leaf (*tawriq*) or plant (*tashjir*).

Similarly to that of plaster carving, stencils are used to transfer the design to the wood. Paint was traditionally made with powdered minerals and animal glue or may have had an egg yolk base. To create the gilded effect, thin tin sheets with saffron and resin is used. Brushes continue to be made in the traditional way with donkey tails hairs. A black outline is added after the main polychrome pattern is painted on. The paint is applied with the brush held vertically. A linseed oil varnish seals the completed design and also adds a patina.

Creating pattern on wood

Basic Simple Stencils

- Fold a piece of 6x9" paper in half vertically, fold in half horizontally, and then fold in half again vertically. Using scissors, cut shapes out along the fold. Open once. Cut out more shapes on the fold. Open all the way. Like the design? If not, refold and cut out more shapes. Once satisfied with the design, your stencil is now ready to use. Tape the stencil on top of a 12x18" sheet of colored construction paper or cardstock on one quarter of it. Use white tempera paint and a sponge, and dab the paint on. Pick the stencil up, move to the second quarter and re-tape. Dab the white paint again on the surface through the open areas. Pick up and re-tape to the third quarter and dab the paint. Pick up the stencil for the last time, re-tape to the last quarter sheet of paper and dab paint on. Take the stencil off the large paper. Use a variety of colors of tempera paint to add detail and color to the painted panel.

Intermediate Design a Ceiling

- Ceilings in Morocco are elaborately designed and painted. Design the ceiling of your bedroom, school classroom, or hallway. Use colored pencils on cardstock to draw the patterns.

Advanced Stencil Cabinet Doors

- Use discarded cabinet doors to stencil a pattern. Design a geometric pattern on cardboard that fits your door. (Stencils can be shared or reused if desired.) Cut out the negative space areas with a craft knife. Place the stencil on the door and tape to secure. Dab white acrylic paint through the stencil onto the wood. Remove the stencil. Add color to the designs using acrylic paint. As a last detail, add thin black outlines.

Textiles

To access the Textiles visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20textiles%20.pdf>

Morocco and Tunisia are known for their fine textiles, such as embroideries, fine weavings, and rugs. Textiles are typically practical and are used in interior furniture settings (pillows, banquet covers, blankets), for clothing, and for tent walls and doors. Rural and urban areas each have a distinct style. Urban textiles show Ottoman, Andalusian, and other cultural influences in the more formal design of a border around a centralized motif. Fez is known for embroidery, and the designs are reversible and monochromatic. Rabat is known for its rugs that have a strong Turkish influence. In Tunisia, Kairouan is renowned for its rug production and quality. Like Rabat, the rugs of Kairouan are inspired by the design of Turkish rugs, incorporating some of the themes such as the mihrab, geometric shapes, and stylized vegetal patterns. Rugs in Kairouan are typically made by women who weave on vertical looms in their homes. Rural textiles in both Morocco and Tunisia are Berber designed with strong geometric shapes and banded colors. The Atlas Mountains in Morocco, particularly the Middle Atlas, are known for their weavings.

There are four main types of looms used: the horizontal ground loom typically used by Berber women to create tent panels; the vertical loom (space effective) used by women to create a variety of textiles, such as clothing, rugs, and blankets; the horizontal shaft loom used by men in urban areas to create clothing and blankets; and the drawloom, which today is used for the specialized purpose of creating wedding veils and sofa covers. Men usually weave on horizontal looms in the urban areas, while women weave on vertical looms in the rural areas.

Creating pattern in textiles

Basic Paper Weaving

- Paper weavings can be very basic or they can be much more complex, depending on the amount of paper strands cut for the warp and the colors and size of strips for the weft. Use a sheet of 12x18" colored construction paper for the warp, or for variety, use canvas paper that has been painted with diluted acrylic paints. Fold in half, and cut vertical strips from the fold to approximately 1" from the end. Open. Cut strips of colored construction paper (or cut strips of painted canvas paper) with the same thickness for a simpler weave or in a variety of thicknesses for a more complex weave. Use repetition and patterning when completing the weave. For a basic weave, use the alternating "under/over" technique, or for a more complex weave, explore variations of the singular "under/over."

Intermediate Tapestry Weaving

- Use a cardboard loom, and warp with yarn. Berbers of the High Atlas Mountains use a variety of bright colors and make up their geometrically banded design as they go along. It is not as important to Berber artists to be exactly symmetrical.



While weaving the typical under/over technique, be sure to incorporate three to four different colors and include three to five different geometric shapes that are repeated throughout the weaving.

Advanced Doodle Embroidery

- Have a tendency to make doodles on the side of your journal or notebook? Turn that doodle into an embroidery. Use muslin cloth placed in an embroidery hoop. Lightly draw your doodle on the cloth, simplifying the drawing into a contour line drawing if necessary. Use your choice of embroidery threads and an embroidery needle to stitch your doodle to life. The Instructable website has good step-by-step instruction on how to embroider if you need assistance.

<http://www.instructables.com/id/Embroidery-101/>

Glass and Light

To access the Glass and Light visual handout, use this Dropbox link:

<https://dl.dropbox.com/u/54970004/Patterns%20of%20complexity%20photo%20handouts%20glass%20art.pdf>

Windows in the Maghreb are not very prevalent for two main reasons: 1. The heat generated from sunlight can be intense in North Africa and 2. The interiors of homes are to be kept private from public viewing. Filtering light becomes necessary to avoid the heat and the public stares. It also creates interplay of light and shadow, of mystery and devotion.

Lighting in the form of lanterns is also decorative, combining metal and colored glass to create beautiful patterns.

Using glass as a support material also affects the interplay of light reflecting on the surface of the painted surface. Painting on glass has traditions in Byzantium, Turkey, and Europe. While glass painting was not a widespread medium seen during the seminar, there were a few instances of glass painting observed- at the Jewish Museum in Casablanca, Morocco, folk art found in the medina in Tunis, and paintings available for sale in a museum gift shop in Sidi Bou Said, Tunisia. Interestingly, three modern artists who visited Tunisia in the early 20th century also experimented with painting on glass: Wasily Kandinsky, Paul Klee, and August Macke. Painting on glass requires the opposite process as painting on wood. Outlines are painted first then the color fill is added. For extra reflectivity, the glass is often gilded.

Creating pattern on glass

A lesson incorporating a simplified paper and colored cellophane version of chemmassiat (glass in carved plaster) can be found in the teacher resource packet Arts of the Islamic World: A Teacher's Guide by the Smithsonian Freer Gallery of Art and Arthur M. Sackler Gallery

<http://www.asia.si.edu/explore/teacherResources/islam.pdf>

Basic Transparencies

- Use acetate sheets or overhead transparencies and permanent markers to create beautiful illuminations. Trace patterns or design your own using a black permanent marker. Fill in using brightly colored permanent markers.

Intermediate A Plexiglas Window to the Courtyard

- Create the look of the interior Moroccan courtyard windows. On a sheet of paper, draw a window shape that takes up most of the space of the paper. Draw simple geometric patterns to fill in the window. Some portions may be left open if desired. Place a piece of Plexiglas the same size as the paper on top of the drawing. Put enough black ink or paint in a half filled bottle of glue to darken it. Mix well. Draw with the bottle of glue, tracing over the outlines of the drawing. Let dry. Thin acrylic paint and paint in the shapes.

Advanced Reverse Painting on Glass

- Make a reverse painting on glass. The look is flattened and abstract, so using pattern and repetition enhances the two-dimensional quality. You will need a piece of glass in whatever size desired. (An empty picture frame can be used, so after the painting is completed, it can be placed in the frame ready for display.) Tape the edges of the glass for safety so the sharp edges will not interfere with the painting of the glass. Draw the design on a sheet of paper within the dimensions as the size of glass and trace with black marker. Flip the paper over so the drawing is in reverse (especially important if words are incorporated into the design). Retrace the design, using a lightbox or backlit by a window if necessary. Place the glass on top of the reversed drawing. Make sure the glass is thoroughly cleaned and dry so the acrylic paint sticks to it. First outline the design. Typically, black paint is used for the outlines. Details should be added first – once the paint touches the glass, nothing else would show behind it. Last, fill in the broader areas of color. This method is the opposite of how wood is painted.



Modern European Artists in the Maghreb

European artists in the 19th and 20th centuries were drawn by the exotic lure of North Africa. The Maghreb was close in proximity to Europe as it was just across the Mediterranean Sea, but its culture was so distant visually, politically, and artistically. During this time period, painting was one of the primary artistic mediums in the Western world, but painting was not as elevated an art form in the Maghreb.

- Artists in the 19th century, such as Eugène Delacroix, were fascinated by the exotic scenery of North Africa, and created so-called Orientalist paintings. Delacroix also spoke of using Persian-style rugs as inspiration. Compare works by Delacroix that depict the Maghreb, such as *Women of Algiers*, 1834, *Lion Hunt*, 1860, and *The Sultan of Morocco and His Entourage*, 1845. Then compare and contrast these Romanized paintings with his Moroccan sketchbook drawings and watercolors. Which are more truthful? Which are more expressive? Why?

Modern masters traveled to North Africa in the early 20th century, which greatly influenced the color palette, use of shapes and repetition, and subject matter in their paintings and drawings.

- French artist Henri Matisse first traveled to the Maghreb in 1906, and Algeria was his destination. An Islamic Art exhibition in Munich held in 1910 furthered his interest in Islamic designs. Matisse took two separate trips to Morocco in 1912-1913. View the three paintings that comprised the so-called “Moroccan Triptych:” *Paysage vu d’une fenêtre (Landscape Viewed from a Window)*, 1912/1913; *Sur la terrasse (On the Terrace)*, 1912/1913; and *Porte de la Casbah (The Casbah Gate)*, 1912/1913. What do these all have in common?
- Swiss artist Paul Klee traveled to Tunisia for only two weeks in 1914, but greatly influenced the direction of his work. He was joined by fellow artists Louis Moillet (Swiss) and August Macke (German). They visited cities such as Tunis, Carthage, Sidi Bou Said, and Kairouan. Macke created numerous paintings, drawings and sketches while in Tunisia. Klee, however, only created a few works while there, such as *Before the Gates of Kairouan*. The majority of his Tunisian inspired works were created upon his European return, such as *View of Kairouan* and *Garden in St. Germain*. Klee wrote in his diaries during the visit “Colour possesses me. I don’t have to pursue it. It will always possess me. I know that...colour and I are one. I am the painter.” Analyze Klee’s work prior to 1914, work completed during his visit, and work done after his travels. How did his work change? Compare and contrast Klee’s work with Macke’s (there are numerous works by Macke of Tunisia available and easily accessible on the Internet). Focus on subject matter, color, and use of shape. Even though they traveled together to the same places, how does their work differ?
- Wassily Kandinsky is often identified as the “father” of non-representational art. How did his travels to Tunisia influence his work, especially his non-objective work?
- While graphic artist M.C. Escher did not visit the Maghreb, he did visit the Andalusian city of Granada, Spain and visited Alhambra Palace, a 14th century

masterpiece of Moorish art. The interlocking shapes of the zellij tilework directly influenced his work, inspiring his tessellation prints and drawings. Compare Escher's sketches of Alhambra with photographs taken of it. Then compare the tessellations of Escher (these works are readily found in books and the Internet). One major difference of Escher's tessellations is the subject matter. In Alhambra Palace, there is no representational subject matter, only geometric shapes, whereas in Escher's work, he only used representational images, primarily animals. Discuss other notable differences. Also discuss how the influence of Alhambra is observable in Escher's tessellations.

Compare and contrast the paintings, drawings and prints of these modern European artists with the traditional artworks made by artisans of the Maghreb as well as scenic photographs of the landscapes. Analyze how the artists incorporated the Islamic art or North African landscape into a Westernized perspective. How is the Islamic pattern of Morocco and Tunisia incorporated into their artwork? To what extent did the artists exaggerate the cultural landscape? How did the visit to North Africa alter the vision of these artists?

Many of the finished paintings and prints were created when the artists returned to Europe. In what way does that change their artwork? Photography was invented in the mid-nineteenth century, and the modern European artists of the twentieth century documented their visits with photography. How do you think photographs of North Africa influenced their art?

Creating pattern inspired by Matisse, Klee, Kandinsky, and Escher

Basic Tessellating motifs

- Find an already existing geometric tessellation in one of the pattern books listed in the resource section. Transform the geometric shape into a recognizable shape by adding details to each shape with thin-tip marker or colored pencils. Repeat the same motif(s) throughout the grid.

Intermediate Tessellations

- Begin with a square sheet of paper (2"-3"). Cut out part of the right side (any shape of your choosing), slide it to the left side, and then carefully tape it. Next, do the same to the top and bottom; cut out a shape from bottom, slide it to the top, and then tape it to the top. Draw a recognizable object on the piece. Trace the motif on a larger sheet of paper. Repeat tracing the motif until the paper is filled with the interconnected shapes. Carefully draw the representational object on each traced motif using thin-line markers or colored pencils.

Advanced The Value of Travel

- The art of Kandinsky, Klee, Matisse, and Escher was directly affected by their travels to the Maghreb. Let a different culture or place inspire a new painting, drawing, or print. If possible, travel to a new location. This can be someplace in another country, another state, another city, or just a different part of town that you are unfamiliar with. If travel is not possible, learn about a new culture through

books and research on the Internet, and view as many photographs as you can. Identify at least ten characteristics of that culture or location as possible. (Colors seen, patterns used, shapes of buildings or of nature, any repetition used, the sounds you hear, the smells encountered, the textures of the location, and the way it makes you feel.) Make visual notations as well- thumbnail sketches of textures or motifs. Capture the idea of the location by abstracting it, focusing on some of those items in your list. Use your choice of materials to capture the value of your travel experience (paint, watercolors, monotype, watercolor pencils, etc.)

Contemporary Moroccan and Tunisian Art

While traditional art and design is so ingrained into the Moroccan aesthetic, modern and contemporary fine artists seek to reflect an aesthetic, sensibility and influence of the 20th and 21st centuries.

Look at the work of Moroccan artists such as Amina Agueznay, Farid Belkahia, Ahmed Cherkaoui, Malika Agueznay, Rim Laabi, Tibari Kantour, and Mimouni, and Tunisian artists such as Triki Gouider, Aïcha Filali, Mohamed Ali Belkadhi, Fakhri El Ghezal, and Halim Karabibene. NAFAS, the on-line magazine for contemporary Islamic art, can be a helpful resource. The Metropolitan Museum of Art in New York not only has one of the best collections of traditional Islamic art, but also has a collection of modern and contemporary Moroccan and Tunisian artists as well.

Find examples of work by as many of the contemporary Moroccan and Tunisian artists listed. Describe the work. How is pattern used in the works? In what ways do traditional Moroccan and Tunisian art influence the contemporary art? How does it differ? How have current governmental policies, changes and turmoil informed the art of the 21st century? In what ways can graffiti be included in the discussion of contemporary art?

Islamic Art in America

The Metropolitan Museum of Art just reopened its extensive collection of Islamic art in the New Galleries for the Art of Arab Lands, Turkey, Iran, Central Asia, and Later South Asia in November 2011. Of particular note is the Moroccan Court, which was installed by master craftsmen from Fes, Morocco. Explore the Islamic collection at the Met, either in person or on their website <http://blog.metmuseum.org/newgalleries2011/en/>. Watch the video “Building the Moroccan Court.”

Resources

The following pages contain books, articles, and websites consulted while writing this curriculum project, many of them directly related to Morocco and Tunisia.

All clip art courtesy of Florida Center for Instructional Technology Clearinghouse (FCIT)

<http://etc.usf.edu/clipart/>

- Provides over 65,000 free clipart images for teachers and students

Books on Islam

Esposito, John L. *Islam: The Straight Path*. Oxford University Press. 1990 (expanded edition).

- An introductory text to the faith, belief, and practice of Islam.

Nasr, Seyyed Hossein. *The Heart of Islam: Enduring Values for Humanity*.

HarperCollins Publishers.

- An introduction to Islam and its “positive contribution to a peaceful and humane global future.”

Educator Manuals and Resources on Morocco, Tunisia, and Islam, and Islamic Art

Duncum, Paul. *Theoretical Foundations for an Art Education of Global Culture and Principles for Classroom Practice*. *International Journal of Education & the Arts*. Vol 2. No. 3. 2001.

- Discussion on art education’s role in teaching visual multiculturalism in the classroom.

Pintó, J., & El Bekay, K. (1998). Art education and social, political, and economic changes in Morocco. In K. Freedman & F. Hernández (Eds.), *Curriculum, Culture, and Art Education* (pp. 121-130). Albany, New York: State University of New York Press.

- A comparison of art education in Morocco from 1961 to 1998.

American Academy of Religion Guidelines for Teaching About Religion in K-12 Public Schools in the United States, Produced by the AAR Religion in the Schools Task Force, Diane Moore, Chair. April 2010.

http://www.aarweb.org/publications/Online_Publications/Curriculum_Guidelines/AARK-12CurriculumGuidelines.pdf

- A must read for any K-12 public school teacher, it contains suggestions on integrating the study of religion to enable students to become religiously literate.

Arts of the Islamic World: A Teacher’s Guide

Smithsonian Freer Gallery of Art and Arthur M. Sackler Gallery (2002)

<http://www.asia.si.edu/explore/teacherResources/islam.pdf>

- An extensive teacher resource on Islam, a diagram of the ritual of prayer, how to write in Arabic calligraphy, as well as art lesson plans.

Islamic Art and Culture: A Resource for Teachers

National Gallery of Art 2004

<http://www.nga.gov/education/classroom/pdf/islamic-tp.pdf>

- A teacher resource on the history of Islam with information on the Islamic collection at the National Gallery of Art.

Islamic Art and Geometric Design: Activities for Learning. The Metropolitan Museum of Art, 2004.

- A resource for teachers with activities you can implement immediately with your classes.

Islamic Art: Working with Pattern. (December 2005/January 2006) *Scholastic Art*. Vol. 36 (3).

- An issue of Scholastic Art dedicated to the patterns of Islamic art.

Kader, T. (April, 2007). Understanding the Art of Islam: Exploring Islamic calligraphy. *SchoolArts*. Vol. 106 (8) p. 62-63.

- Lesson plan on incorporating Islamic calligraphy.

Memphis in May International Festival, Educational Resources

<http://www.memphisinmay.org/educationresources>

- Memphis, Tennessee honors a different country during their international festival each May, and Tunisia was the honored city in 2010. There are plenty of educational PowerPoints and resources included on this website for all the countries honored, including detailed curriculum guides. The 2010 Tunisia Curriculum Guide is a great general education resource for K-12 teachers who want a variety of activities and lesson ideas for their classrooms, including Arabic language integration, decorating doors inspired by those in Sidi Bou Said, a critique of movie sets filmed in Tunisia, and a now-dated President Ben-Ali's 2010 as "World Youth Year."

Middle East Center Outreach Program, University of Utah, College of Humanities

<http://www.mec.utah.edu/outreach/?pageId=1323>

- Lesson plans created by K-12 teachers during the 2010-2011 seminar on Morocco and North Africa, with links to other resources on Morocco and Berbers.

Teacher's resource: Maths and Islamic Art & Design

Victoria and Albert Museum

<http://www.vam.ac.uk/content/articles/t/teachers-resource-maths-and-islamic-art-and-design/>

- Information on the Islamic art of the Victoria and Albert Museum with lessons on creating pattern using various grids that are provided.

Teaching About Islam and Muslims in the Public School Classroom, 3rd ed.

Council on Islamic Education, California (1995)

http://aai.3cdn.net/ceecfb6bf1ff4950a_fjm6bebc.pdf

- Suggestions for teaching public K-12 students about Islam.

Islamic Design Pattern and Coloring Books

Crossling, Nick. *Alhambra Coloring Book*. Dover Publications. 2008.

- Thirty geometric designs found at Alhambra Palace, Grenada, Spain.

Wilson, Eva. *Islamic Designs for Artists and Craftspeople*. Dover Publications. 1988.

- 280 illustrations of Islamic designs, with diagrams of geometric patterns, however, none are from Morocco or Tunisia

Bourgoin, J. *Arabic Geometrical Patterns and Designs*. Dover Publications. 1973.

(Original title *Les Elements de l'art arabe: le trait des entrelacs*, originally published 1879.)

- 200 plates of Islamic linear patterns, most with faint construction lines on a portion of each plate for understanding the underlying geometry.

Noble, Marty. *Decorative Tile Designs Coloring Book*. Dover Publications. 2006.

- 30 plates of individual tiles or a grouping of tiles from Spanish, Islamic, and Victorian sources.

Hendler, Muncie. *Infinite Designs Coloring Book*. Dover Publications. 2006.

- 30 plates of interlocking, repeating pattern.

Jewell, Rebecca. *British Museum Pattern Books: African Designs*. British Museum Press. 1994.

- Line designs found in pottery, jewelry and other artwork from a variety of African cultures.

Children's Books

Abderrahman, Ayoub; Jamila Binous; Abderrazak Gragueb; Ali Mtimet; and Hedi Slim. Illustrated by Francesco Corni. Translated by Kathleen Leverich. *Umm El Madayan: An Islamic City Through the Ages*. Houghton Mifflin Company. 1994.

- A pictorial chronology of a fictional city located on the Mediterranean coast in North Africa, well illustrated with detailed pen and ink drawings.

Baker, Jeannie. *Mirror*. 2010.

- A wordless picture book, it compares the lives of two boys, one in Morocco and one in Australia;

Barber, Nicola. *Islamic Art and Culture*. Raintree. 2005.

- A children's book on Islamic arts in general, well-illustrated with photographs of architecture and art categorized by medium.

Fowles, Shelley. *The Bachelor and the Beam*. 2003.

- a Jewish Moroccan folk tale.

Ichikawa, Satomi. *My Father's Shop*. 2006.

- Follows a boy and his love for a damaged carpet in a Moroccan souk.

Jungman, Ann. Illustrated by Shelley Fowles *The Most Magnificent Mosque* (2007)

- follows three mischievous boys- one Jewish, one Muslim, and one Christian- and is set in the Great Mosque of Cordoba, Spain.

Letts, Elizabeth and Alalou, Ali. Illustrated by Julie Klear Essakalli. *The Butter Man*. 2008.

- depicts a father who tells his daughter of his Berber upbringing in the Atlas Mountains.

General Books on Islamic Art, Moroccan Art, and Tunisian Art

Bloom, Jonathon and Blair, Sheila. *Islamic Arts*. Phaidon Press Limited, 2010.

- Islamic art organized by medium throughout history.

Bloom, Jonathan M. The Origins of Fatimid Art. *Murqanas*, Vol. 3 (1985), pp. 20-38. BRILL.

- An analysis of a half-century of Fatimid Art in North Africa (primarily Tunisia) before their arrival in Egypt.

Castéra, Jean-Marc. Photographs by Françoise Peuriot and Philippe Ploquin. *Arabesques: Art Décoratif au Maroc*. ACR Édition. 1996.

- Written in French, this is a beautifully illustrated book of pattern in Morocco, including plasterwork, zellij tile, and wood painting. Of particular interest are the diagrams of the patterns hand drawn on graph paper. If you can read French, this book would be an amazing resource for you. (There is an English translation of this book, but I was unable to acquire it.)

Clarke, Suzanna. *A House in Fez: Building a Life in the Ancient Heart of Morocco*. Pocket Books. 2008.

- Narrative about an Australian couple who buy a house in the medina of Fez chronicling the long, difficult yet rewarding processes of restoring it.
- Their website, The View from Fez, updates cultural information regularly. <http://riadzany.blogspot.com/>

Goldenberg, André. *Bestiaire de la Culture Populaire Musulmane et Juive au Maroc*. Ésidud, Aix-en-Provence, 2000.

- Written in French, this book is well illustrated with photos of animals found in Moroccan artwork, traditional as well as contemporary. It is also well organized (each section contains a different animal), so even non-French speakers can utilize this resource.

Hillenbrand, Robert. *Islamic Art and Architecture*. Thames & Hudson. 1999.

- Islamic art and architecture organized by chronological dynasty.

Jereb, James F. *Arts & Crafts of Morocco*. Chronicle Books, 1995.

- Media such as textiles, jewelry, woodwork, and leatherwork are addressed. Much of the book describes Berber crafts traditions, including sections on tattoos and ceremonies.

Jones, Owen. *The Grammar of Ornament*. DK Publishing. 2001. (Original edition published by Day and Sons, 1856.)

- A classic publication on patterns and ornamentation from around the world, very well illustrated.

Micaud, Ellen. The Craft Tradition in North Africa. *African Arts*, Vol. 3, No. 2 (Winter, 1970), pp. 38-43 and 90-91.

- A straightforward discussion of crafts (mostly pottery and weaving) in the Maghreb, including questions of aesthetics in regards to authenticity and long term viability of an artisanal trade.

Museum With No Frontiers, *Ifriqiya: Thirteen Centuries of Art and Architecture in Tunisia*. Museum With No Frontiers International Exhibition Cycle of Islamic Art in the Mediterranean. 2002.

- A wonderful concept of seeing art and architecture in its context and labeling it as a "Museum With No Frontiers Exhibition." Basically, it is a guidebook with itineraries and historical information of various Tunisian cities.

Paccard, André. Translated from the French by Mary Guggenheim. *Traditional Islamic Craft in Moroccan Architecture*. Editions Ateliers 74. 1980.

- A two-volume set on the art of Morocco. Well-illustrated with detailed explanations of the process of creating the different art forms. Wonderful resource if you can find it.

Paydar, Niloo Imami & Grammet, Ivo (Eds.). *The Fabric of Moroccan Life*. Indianapolis Museum of Art. 2002.

- Catalog to the exhibition *The Fabric of Moroccan Life* showing

Trilling, James. *The Language of Ornament*. Thames and Hudson. 2001.

- This book encompasses the ornamentation of all types of art, not just Islamic art.

New York Times. History's Hands: At the Met, Moroccan craftsmen create a brand new 14th century courtyard to anchor the Islamic art galleries

<http://www.nytimes.com/2011/03/20/arts/design/metropolitan-museums-moroccan-courtyard-takes-shape.html?pagewanted=all>

- Article from March 20, 2011 detailing the installation of the Moroccan courtyard at the Metropolitan Museum of Art with photos of the process.

Geometric Patterns in Islamic Art

Broug, Eric. *Islamic Geometric Patterns*. Thames & Hudson, 2008.



- Contains step-by-step directions (with an interactive CD-ROM) to create the geometric patterns found in the zellij designs on numerous Islamic structures. Very user friendly, even for the non-mathematician.

Critchlow, Keith. *Islamic Patterns: An Analytical and Cosmological Approach*.

- A thorough analysis of Islamic patterns not only in a mathematical application, but also in a spiritual sense.

El-Said, Issam. El-Bouri, Tarek & Critchlow, Keith (eds.) *Islamic Art and Architecture: The System of Geometric Design*. Garnet Publishing. 1993/2001.

- A very mathematically annotated analysis of Islamic geometry. Interested in square roots and systems of proportion? This is for you.

Sutton, Daud. *Islamic Design: A Genius for Geometry*. Walker Publishing Company, Inc., 2008.

- One of the series of small Wooden books, *Islamic Design* breaks complex ideas of geometric pattern into accessible and easy to understand ideas. Most patterns are broken into a two-page spread of text/explanation on one page and patterns on the other.

Verner, Corinne. Photographs by Cécile Tréal and Jean-Michel Ruiz. *The Villas and Riads of Morocco*. Abrams. 2004.

- A beautifully illustrated and highly informative book on the homes of Morocco.

Patterns in Islamic Art

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

- Patterns in Islamic Art contains over 4,000 images of Islamic design, including diagrams of designs, historical and religious significance, and photos categorized by region. Excellent Internet resource.

Zellij and Mosaic Resources

Ben Abed, Aicha. *Tunisian Mosaics: Treasures from Roman Africa*. Getty Publications, 2006.

- Well-illustrated book on Roman mosaics in Tunisia.

Hall, Katrina. *The Mosaic Project Book: Moroccan Style*. Murdoch Books. 2000.

- Contains step-by-step directions on how to construct mosaic mirrors, table tops, and shallow bowls using glass and ceramic tiles.

Hedgecoe, John & Damluji, Salma Samar. *Zillij: The Art of Moroccan Ceramics*. Garnet Publishing Limited. 1992.

- Well-illustrated book about the art of zillij tile making and ceramics in Morocco.

The Bardo Museum in Tunis

<http://www.museedebardo-tunisie.tn/test/presentation.php#>

- On-line galleries of the mosaics and a virtual tour of the museum make the artistic medium of mosaic come alive.

The Chicago Mosaic School

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

- The Chicago Mosaic School is a great resource for the Chicago area, offering a variety of classes on how to create mosaics, with an on-line gallery, and on-site store and gallery.

Design a Mosaic

<http://gwydir.demon.co.uk/jo/mosaic/index.htm>

- For those who would like an alternative in completing a mosaic, this site allows the user to design a mosaic online.

Le Mosaiste

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

A website featuring Moroccan mosaics. Includes a variety of tiles and mosaics for purchase as well as photos and video of the process of making the zellij tile. (Their chiseled 4" x 4" tiles were featured in the September 2011 issue of InStyle magazine for use as coasters.)

Ceramic Resources

Macaulay, Sara Grove (January 2001). Two Views of Islam: Ceramic Tile Designs and Miniatures. *Art & Activities*. Vol. 128 (5) 30-31, 42.

- Middle school lesson on incorporating Islamic art into the classroom.

Ceramic Arts Daily

<http://ceramicartsdaily.org/pottery-making-techniques/handbuilding-techniques/creating-colorful-ceramic-jewelry-using-a-carved-plaster-slab-and-casting-slip/?floater=99>

- Step-by-step directions on creating ceramic brooches using plaster as a mold for casting slip.

Paul Barchilon, ceramic artist

<http://home.comcast.net/~pbwebsite/>

- Ceramic artist Paul Barchilon's Moroccan inspired designs, with an extensive gallery and step-by-step explanation of how some of the designs were created.

Calligraphy and Arabic Language Resources

Arabic at Stanford

<http://www.stanford.edu/dept/lc/arabic/alphabet/chart.html>

- The Arabic Alphabet chart with video on how to write the letters and audio pronunciation

Calligraphy Qalam: Arabic, Ottoman & Persian Calligraphy



<http://calligraphyqalam.com/index.html>

A great resource on Arabic, Ottoman and Persian calligraphy, with examples of styles, process, historic gallery, and additional resources, including an educator link.

Qalam wa Lawh

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

- Arabic Language School in Rabat, Morocco

Omniglot: The Online Encyclopedia of Writing Systems & Languages

<http://www.omniglot.com/language/colours/index.php>

- Useful site to identify dozens of different languages, such as color words.

Sakkal Designs: The Art of Arabic Calligraphy

<http://www.sakkal.com/ArtArabicCalligraphy.html>

- A four-part article about the Art of Arabic Calligraphy by Mamoun Sakkal with well-designed illustrations.

Modern and Contemporary Art Resources

Burnett, David. Paul Klee: The Romantic Landscape. *Art Journal*, Vol. 36, No. 4 (Summer 1977), pp. 322-326. College Art Association.

- Article discussing Paul Klee's visit to Tunisia that was deeply personal and transformative.

M.C. Escher: Working with Shape. (February 2010) *Scholastic Art*. Vol. 40 (4).

- An issue of *Scholastic Art* dedicated to M.C. Escher and his tessellations.

Powe, Faye. Matisse in Morocco: The Paintings and Drawings, 1912-1913. Teacher's Packet. National Gallery of Art, Washington, D.C. 1990.

- Teacher's packet of information and lesson activities relating to an accompanying exhibit of Matisse in Morocco at the National Gallery of Art.

The Metropolitan Museum of Art Heilbrun Timeline of Art History

http://www.metmuseum.org/toah/hd/nasp/hd_nasp.htm

- The Metropolitan Museum of Art Heilbrun Timeline of Art History section on "The Magic of Signs and Patterns in North Africa" with contemporary artwork from Moroccan and Tunisian artists.

NAFAS Art Magazine: Contemporary art from the Maghreb to the Middle East, from Central Asia to SE Asia

<http://universes-in-universe.org/eng/nafas>

- An on-line magazine dedicated to contemporary Islamic art. Both Morocco and Tunisia are represented well.

Taboroff, June. Travels in Tunisia. *Saudi Aramco World*, May/June 1991.

<http://www.saudiaramcoworld.com/issue/199103/travels.in.tunisia.htm>

- Article discussing the impact that traveling to Tunisia had on Klee and Macke.

Saudi Aramco World

<http://www.saudiaramcoworld.com>

- A bi-monthly magazine published to promote cross-cultural understanding, primarily between Arab and Muslim cultures and the West. A number of articles relate to Morocco, Tunisia and art.