

Tile wall and calligraphic signature of the Sultan from the Topkapi Palace



Tiles for the Sultan:

A Two-Part Unit for Fourth and Fifth Grade on Creating Ceramic Tiles in the Classical Ottoman Style

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Lesson-at-a-Glance:

The purpose of this unit is to expose fourth and fifth grade students to one of the many decorative arts of the "classical era" of the Ottoman Empire. This particular Turkish traditional art form provides a window into many aspects of history, culture, religion and geography of that country. As the Ottoman Empire was such a strong presence in Western European consciousness for most of the last 600 years, and with modern-day Turkey being a key player in the Middle East, it would benefit American students to learn about a culture that is often overlooked in our schools.

In this two part unit, the students will make two artistic creations:

Part 1. A 6" by 6" paper "tile" with stylized Ottoman floral motifs in bilateral or rotational symmetry, "painted" with colored pencils.

Part 2. A glazed ceramic tile with motifs inspired by the flora of the student's own geographic locale, then stylized in the Ottoman tradition and configured in bilateral or rotational symmetry.

Background Information:

Beginning with the reign of Mehmet II (1444 - 1481), the royal court of the Sultan in Istanbul was centered in a palace complex called the Topkapi Saray. During the classical age (1444 - 1600) of Turkish art during Ottoman rule, talented artisans from all over the empire - parts of Europe, Asia and Africa - converged at the palace to create works of lavish beauty. One highly developed art form of the period was ceramics. Decorative tiles were commissioned for the Topkapi Saray, and other monumental buildings of the era, and a unique artistic style blossomed. The designs of these tiles, expressed the glory and the power of the empire to all who saw them. The expanses of tiled walls in the Topkapi, the Suleyman (Suleymaniye) Mosque and the Mosque of Sultan Ahmet (also known as the Blue Mosque for its blue tile interior), look almost as brilliant today as they did when they were first installed. Artisans of that era had developed an aesthetic of such timeless appeal along with long-lasting colorful glazes, that artists and scientists of today continue to analyze them.

With Istanbul as the center of ceramic arts commissions, workshops opened in the outlying cities of Iznik, Kutaya and Halic to meet the great demand. Even today, there are signature designs that are associated with those cities.

Mindful of the prophet Mohammad's mistrust of figurative images as being potentially idolatrous, the Muslim Sultans forbade the illustration of humans or animals on public art. Instead, they encouraged the development of three different artistic directions: Stylized and symmetrical floral designs, geometric patterns and intricate Arabic calligraphy celebrating Allah and the prophets of Islam. This unit focuses on the stylized floral motifs but examples of the other two directions can be shown to students.

Chinese decorative motifs and techniques made their way to the region as early as the 8th Century. This influence can be seen in the blue and white color-scheme of many Ottoman tiles. But in time the demand for richer color-schemes grew and by the height of the classical era, glazing techniques for blues and greens along with turquoise (note the origin of the name of this color), red and black had been perfected.

These motifs and glazing techniques eventually traveled back with visiting artisans to their countries of origin, and thus the Ottoman style was spread world-over.

Examples of this cultural spread can be seen in the tile-work of North Africa, in Spain under the influence of the Moors, and then in Mexico via the Conquistadors. It is insightful to show the students examples of Talavera tiles from Mexico.

Before creating their own tiles, the students will view pictures (taken by this teacher) of 500-year-old tiles from the Topkapi Palace in Istanbul and newer tiles from the Buyuk Ada, an island in the Sea of Marmara near Istanbul. They will also see examples of tiles from the Mosque of Sultan Ahmet (Blue Mosque) pulled from The Republic of Turkey - Ministry of Tourism web site. They will see some examples of the work of Ismail Yigit, a contemporary ceramic artist and founder of the Marmara Cini Atelier (workshop) in Kutaya, which has revived ancient ceramic formulas and the Ottoman decorative style. All these pictures are available at the end of this packet. They will also see examples of Iznik tiles directly from Walter B. Denny's, [Iznik: The Artistry of Ottoman Ceramics](#). More examples of Yigit's work can also be found on his web site: www.ismailyigit.com.tr/ or iyigit@marmaracini.com.

National Standards for Parts 1 and 2:

1. Understanding and applying media, techniques and processes.
2. Choosing and evaluating a range of subject matter, symbols and ideas.
3. Understanding the visual arts in relation to history and cultures.
4. Reflecting upon and assessing the characteristics and merits of their work and the work of others.
5. Making connections between the visual arts and other disciplines.

Part 1: Paper Tile

Learning Goals:

Learning Goal 1. Students will understand the historic, geographic and religious context of the Ottoman-era Turkish tiles as an art form. They will also become aware of the influences upon this art form and the influence this art form had/has on other cultures.

Learning Goal 2. Students will create their own symmetrical paper tile with stylized natural motifs inspired by examples of classical Ottoman tiles. To create these paper tiles, the students will employ the math skills of measuring, dividing space and tessellation.

8. **Bilateral Symmetry** - Symmetry in which the same image is arranged on opposite sides of a central axis so that a line can divide the whole into two identical halves. Mirror image is another way to explain this. Examples of bilateral symmetry in nature can be pointed out to the students. All animals can be divided in half and are symmetrical on both sides. Butterflies are great examples of this. Show the students your own face and draw an imaginary line down the middle.
9. **Rotational Symmetry** - symmetry in which the same image is rotated and repeated around one point. A pinwheel is a good example. Examples in nature, such as flowers, can be identified.
10. **Tessellation** - How geometric shapes fit perfectly into one another to form other geometric shapes. In our case, four triangles will fit together to make our 6" by 6" square paper tile.

Materials/Resources Part 1:

1. Map of Turkey
2. Map the world or specifically the Middle East
3. Iznik: The Artistry of Ottoman Ceramics by Walter B. Denny
4. Treasury of Turkish Designs: 670 Motifs from Iznik Pottery by Azade Akar
5. Color printouts (and overhead transparencies) of photographs of tile-work from the Topkapi Palace and the Mosque of Sultan Ahmet in Istanbul (examples provided at the end of this unit)
6. Color printouts (and overhead transparencies) of the tile work of Ismail Yigit of the Marmara Cini Atelier (examples provided at the end of this unit)
7. If possible, real examples of contemporary tiles or ceramic housewares decorated in Ottoman style
8. Overhead projector to show transparencies or projection capability for internet images
9. Transparent paper (9" by 11") for tracing. One sheet per student.
10. Thick (80lb.) white drawing paper (9" by 11") for the colored tile
11. Sharp pencil
12. Colored pencils - wide variety of colors and a good sharpener.
13. Vocabulary list
14. Optional - time line on wall with key dates of Turkish history
15. Optional - Classical Ottoman music or contemporary Turkish singers such as Sezen Aksu to play during quiet student work time

Estimated Time for Part 1:

Total of 6 class sessions (if each is 45-50 minutes)

Prior Knowledge for Part 1:

1. Using transparent paper to trace motifs in pencil from another paper.
2. Using this same transparent paper to reproduce a copy of the motif on a new piece of paper by turning the pencil marks down toward new paper and retracing the image again. The pressure made by the pencil on the back causes the pencil marks on the original side to be transferred to the new paper.
3. Using a ruler to measure out a space and divide into equal parts.
4. Prior art lessons involving bilateral (mirror image) symmetry.
5. Experience using colored pencils to carefully fill in an area in solid color.
6. Tessellation - students have seen the work of MC. Escher (1898-1972) a Dutch graphic artist who was influenced by mosaics and tile work of Mediterranean countries and developed artistic works using mathematical divisions of the plane.

Vocabulary for Part 1:

1. **Republic of Turkey** ("Turkiye" in Turkish) - the name for the modern republic founded by Mustafa Kemal Ataturk in 1923. **Ankara** is the capital.
2. **Ottoman Empire** (1299 - 1922) - At the height of its power in the 16th century, it included Anatolia, the Middle East, parts of North Africa and much of south-eastern Europe to the Caucasus in the north.
3. **Istanbul** - The largest city in Turkey (pop. 11 million) was formerly called Constantinople. Constantinople was conquered, renamed Istanbul, and made into the capital city of the Ottoman Empire by Sultan Mehmet II in 1453.
4. **Iznik, Kutaya and Halic** - Three centers of ceramic workshops during the classical Ottoman era in mid 16th century.
5. **Stylized Motifs** - Representational or realistic images that are somewhat abstracted and abbreviated so that they are automatically recognized for what they are but not exactly true to nature. The tulip motif in many of the Ottoman tiles is a good example: Certain features are exaggerated and simplified in order to use as repeated design or pattern, but the image is clearly recognizable as a tulip.
6. **Tulip** ("Lale" in Turkish) - The most common flower used in the decoration of classical Ottoman tiles. The tulip is indigenous to Turkey and not Holland, as is commonly assumed. This bulb flower became a symbol of the Ottoman Empire in its most opulent and peaceful times. The reign of Sultan Ahmed III 1718 -1730 is actually called the "Tulip Era."
7. **Symmetry** - Balanced proportions that are pleasing to the eye.

The Turks are very proud of their artistic heritage. These stylized floral motifs, from Ottoman era ceramic arts, appear in the most surprising places!



Sherman 6/05

Lesson Outline:

Session One

1. Show the map of the world and where Turkey is in relation to the United States of America. Show the map of the Middle East, or specifically the map of Turkey, to show the size of the country and where Istanbul is in relation to the rest of the country. Tell the students how to say Turkey in Turkish ("Türkiye"). Show the extent of the Ottoman Empire on the map. It is interesting to compare the size of present-day Turkey to that of the former empire. Students get a kick out of guessing what continent Turkey is on and then hearing that Turkey, and Istanbul in particular, straddles the two continents of Europe and Asia.

2. Show a number of examples of Ottoman tiles. Have at least four different color pictures of tiles on each table. Pass out a sheet of questions for students at each table to discuss in their table groups. Read the questions to the whole class and define words such as "motifs" and "symmetry" and clarify any questions. The students should consider the examples they see at their tables and the ones you showed to the class as a whole. Designate one student at each table to write the answers on the sheet: (Discussion and writing should take no more than 5 minutes.)

- a. What motifs do you see in the tiles?
- b. What motifs don't you see in any of these tiles?
- c. What kind of symmetry do you see in the tiles? Try to explain bilateral and rotational symmetry when looking at these examples.
- d. What shapes of tiles do you see? Draw how they fit (or tile/tessellate) together.
- e. What colors do you see in the tiles?

3. Class discussion of answers: Go over each question allowing one student from each table to read the answers. The Socratic questioning of students should illuminate some main issues and themes regarding the Ottoman tiles:

- a. The imagery on the tiles is either stylized/symmetrical floral designs, geometric patterns or intricate Arabic calligraphy. Tell students that we will focus on the floral motifs for this lesson. Define stylized motifs as opposed to realistic images of flowers for the students (see vocabulary list). It is helpful to show a photograph of a tulip (or have a real one!) in order to show the difference between a realistic rendition and a stylized one. (**Extension:** Have students look at a real tulip and sketch a stylized rendition.)

- b. The lack of human or animal representation in tiles was a result of the prophet Muhammad's mistrust of figurative images as being potentially idolatrous. Therefore, the Muslim Sultans forbade the use of such images in public art. (In each of my four 5th grade classes there was at least one Muslim student who could tell their own anecdote about non-representational Islamic art. This became very empowering for those students and insightful for the others.)
 - c. The two symmetries can be defined for students (see vocabulary list).
 - d. Define or remind the students about tessellation (see vocabulary list). Show an example of this in from one of the pictures. (**Extension:** One can show an example of the work of MC. Escher who was influenced by Mediterranean region tile work.)
 - e. A color scheme of mostly blues, greens and turquoise with an accent of red or orange will be apparent to the students. Black was used to outline the motifs in a delicately applied thin line. In our lesson, we will use a dark blue or green outline for the motifs in our paper tiles. Students have a difficult time making the lines thin enough and a thick black line will overpower the design.
4. After the answers are discussed, gather the students around a table to demonstrate using a ruler to measure a 6" by 6" square in the middle of the thick white (9" by 11") paper. Show how to divide the square into four triangles by using a ruler to draw a diagonal line from each corner. (**Extension:** Ask the students what fraction or percentage each triangle is of the whole square.) Explain that this is the paper to be used for the final colored-in tile for Part 1 of this unit. We will call this the "base" paper as opposed to the transparent paper that will be used next week to trace their choice of floral motifs.

Session Two

1. Have all the examples of tiles and motifs out on the tables for students to use. Have photocopies of examples from the Akar book on the tables.
2. Demonstrate the careful and precise tracing of the 6" by 6" square (and the diagonal lines that make up the four triangles) from the white paper (created in Session One) on to the transparent paper. Students must use small pieces of scotch tape to tape the transparent paper on top of the white paper. Then they must trace the form using a ruler and sharp pencil. Show students how to make the tape less sticky by pressing their fingers on the sticky part a few times. This way the tape will not rip the "base" paper every time you lift the transparent paper off of it.
3. Demonstrate how the students will choose their favorite motifs from the examples and trace three stylized floral or vegetation motifs onto the transparent paper. Show

how they can alter the existing motif to make it more personalized or unique. They can also choose to completely create their own motifs in a similar style. Some students will opt to trace directly. (I have chosen to allow this because I feel this is still educational. The act of tracing makes the students familiar with the process of stylizing from nature.) Show how they must arrange the three motifs in a pleasing manner **onto only one of the triangles on the transparent paper**. Direct them to make one of these motifs bigger than the other two so that this image becomes a primary focus.

4. From the examples at hand, point to how often an image of a flower will appear half in one tile with the other half in the tile right next to it. The halves become whole once the tiles are placed together. This will explain bilateral symmetry to the students again. Tell them to consider this kind of symmetry when placing the motifs in that first triangle on the transparent paper.

5. When the students begin to trace three motifs, remind them that they should only draw in one of the triangles. This one triangle will later be used to trace the motifs into all four of the triangles on the base white paper. Allow them to go from table to table, choosing images that appeal to them.

6. Demonstrate transferring the motifs in the one triangle on the transparent paper to the base paper. Show the "pencil tracing and pressure" technique. Students must turn the transparent paper with the graphite pencil markings facing down against the base paper. They should tape it into position and then carefully retrace the entire image on the backside of the transparent paper. This pressure causes the pencil markings to transfer onto the base paper.

Session Three

1. Gather students for teacher demonstration. Once the first triangle is copied from the transparent paper onto the base paper, the students can decide whether they wish to have a tile that is in either bilateral or rotational symmetry. If the student has half an image on one edge of the first triangle, then they must choose the bilateral option. If all their elements are complete in the first triangle, not split up, then they can choose either type of symmetry.

2. Also demonstrate the pencil tracing and pressure technique for the next three triangles. If the student chooses rotational symmetry, they will simply rotate their transparent paper each time they copy the original triangle to the next triangle. If they are employing bilateral symmetry, then they must rotate and flip the transparent paper. **Emphasize that they must carefully register the X on the transparent paper with the X on the base paper.** The X was created by the two diagonal lines extending from each corner of the square to make the triangles. The students should tape the

transparent paper to the base paper each time they rotate (or rotate and flip) the transparent paper to copy the motifs to the next triangle. Taping keeps both papers in the correct position.

3. Check students as they work.

4. If a student finishes copying from the original triangle on the transparent paper to all four triangles of the base paper, then they can tape the transparent paper down one last time on the base paper and copy the entire tile design onto the transparent paper. This complete tile tracing on the transparent paper will be used later in **Part 2** when planning the ceramic tile.

Session Four

1. Gather the students for a repeat demonstration of the last step in Session Three. Remind them that once they finish copying from the original triangle on the transparent paper to all four triangles of the base paper, they can tape the transparent paper down one last time on the base paper and copy the entire tile design onto the transparent paper. This is for later use when planning the ceramic tile. Once they have done this, collect these transparent papers for Part 2 of this unit. (You may choose to use these motifs for the ceramic tile in Part 2 or to rework a new version based on student observations of their local natural environment.)

2. Check students as they work.

3. Teacher Demonstration - Coloring in your paper tile:

- a. Once the completed transparent paper is collected from a student, he/she can start to color their paper tile.
- b. Show the students, once again, examples of tiles emphasizing the color scheme. The Walter B. Denny book is a nice way to show color schemes at this stage.
- c. Talk about the innovations of the blues and greens and the combination of both, being turquoise. Mention that red glaze was harder to work with and therefore used sparingly.
- d. Optional: Mention that some of these glazing techniques along with the exact compositions of the ceramic materials from the past have been lost for years. Scientists have struggled to analyze how these long lasting glazes and ceramics were made. The artist, Ismail Yigit, is using some of these old techniques today.
- e. Show how to outline the motifs using a sharp dark blue or dark green pencil.
- f. Direct students to use red or orange only as an accent. Direct them to decide what will be in red or orange first and then decide on the other blues, greens and turquoises for the other motifs.
- g. Demonstrate how to color in a solid careful fashion. The colored pencil should be sharpened often and should be applied solidly so that the tiles will

appear as though they are painted.

4. Check as students color in their paper tiles.

Session Five

1. Briefly demonstrate coloring in the tiles to remind students of key points.
2. Check them as they work.
3. Optional: Have students get up and walk around to view the work of their peers.

Session Six

1. Students continue to color in their paper tiles. Checks them as they work.
2. **Presentation:** A nice matting option for these paper tiles is to cut them out of the 9' by 11" white "base" paper, leaving only a small white space as a border. Then mount each tile in a diamond position on a high-quality colored 12" by 12" piece of construction paper. Choose the colored paper that will go nicely with colors that appear in the tile. The tiles can be cut and matted during class time as students finish their work.

Assessment:

Display all tiles on a table. Give students time to look at one-anothers' art work. Then, hand out the 1-4 rubric and have the students assess their own tile based on this rubric. Their own assessment allows them opportunity for reflection on their work. The teacher should assess the work afterward.

Grading Rubric for Turkish Paper Tiles:**4**

- Tile clearly displays either bilateral or rotational symmetry
- At least three stylized floral or vegetation motifs are present with one being bigger for primary focus
- Motifs are carefully outlined with a dark blue or green pencil
- Appropriate Ottoman color-scheme was applied inside the outlines of the motifs: blues, greens, turquoise and also red or orange for accent
- Color is applied in a smooth, solid manner so that no paper is showing
- Smudges on the white edges of the work have been carefully erased

3

- Tile is close to being in either bilateral or rotational symmetry
- At least three stylized floral or vegetation motifs are present. No primary focus on any one motif.
- Motifs are less carefully outlined with a dark blue or green
- Appropriate Ottoman color-scheme was almost correctly applied and mostly inside of the outlines of the motifs. There is either no red/orange accent or too much use of red/orange
- Color is applied in a mostly smooth, solid manner but, some paper is showing in a few places
- Smudges on the white edges of the work have been mostly erased

2

- Tile is far from being in either bilateral or rotational symmetry
- Less than three, or too many, motifs. Not well stylized.
- Motifs are not carefully outlined.
- Partial Ottoman color-scheme applied but not totally within the motif outlines.
- Color is applied in a somewhat smooth manner. Paper is showing in a number of places
- Smudges on the white edges of the work have not really been erased

1

- Tile does not employ any type of symmetry
- Motifs are not well drawn or stylized.
- Motifs are not outlined
- No clear color-scheme is applied.
- Color is applied in a messy manner. Paper is showing in many places
- Smudges appear all over white edges of the tile.

Part 2: Ceramic Tile

Learning Goals:

Learning Goal 1. Students will understand the historic, geographic and religious context for the Ottoman-era Turkish tiles as an art form. They will also become aware of the influences upon this art form and the influence this art form had/has on other cultures.

Learning Goal 2. Students will create a symmetrical ceramic tile with stylized natural motifs from their local environment and also inspired by examples of classical Ottoman tiles. The students will employ skills of working in clay: Smoothing, drawing onto the clay surface and glazing. They will use the same math skills of measuring, dividing space and tessellation (from Part 1) in Part 2.

Prior Knowledge for Part 2:

1. Using transparent paper to trace motifs in pencil from another paper.
2. Using this same transparent paper to reproduce a copy of the motif on a leather-hard slab of clay cut into a 6" by 6" tile, by turning the pencil marks down toward that clay surface and retracing the image again. The pressure made by the pencil on the back causes the pencil marks on the original side to be lightly traced to the clay surface.
3. Using a ruler to measure out a space and dividing into equal parts
4. Prior art lessons involving bilateral (mirror image) symmetry.
5. Prior art lessons involving cutting into a slab of clay, smoothing, and incising an image on clay.

Vocabulary for Part 2:

1. **Ceramics** - The art of making objects out of clay.
2. **Kiln** - The type of oven that can heat up to very high temperatures to fire clay
3. **Leather-hard** - The stage at which clay is dry enough to be somewhat strong, but still soft enough that pencil impressions can be made on its surface. This stage is right before the clay becomes completely hard and is called greenware.
4. **Bisque ware** - A clay object that has been fired once in the kiln
5. **Stylized Motifs** - Representational or realistic images that are somewhat abstracted and abbreviated so that they are automatically recognized for what

they are but not exactly true to nature. The tulip motif in many of the Ottoman tiles is a good example: Certain features are exaggerated or simplified in order to use as repeated pattern, but the image is clearly recognizable as a tulip.

6. **Symmetry** - Balanced proportions, pleasing to the eye.
7. **Bilateral Symmetry** - Symmetry in which the same image is arranged on opposite sides of a central axis so that a line can divide the whole into two identical halves. Mirror image is another way to explain this. Point to examples of bilateral symmetry in nature. All animals (butterflies are a great examples of this) can be divided in half and are symmetrical on both sides. Show students your own face and draw an imaginary line down the middle.
8. **Rotational Symmetry** - symmetry in which the same image is rotated and repeated around one point. A pinwheel is a good example. Examples in the students local flora can be identified.

Materials/Resources Part 2:

1. Iznik: The Artistry of Ottoman Ceramics by Walter B. Denny
2. Color printouts of the photographs of tile-work from the Topkapi Palace in Istanbul (examples provided at the end of this unit)
3. Color printouts of the tile work of Ismail Yigit of the Marmara Cini Atelier (examples provided at the end of this unit)
4. If possible, real examples of contemporary tiles or ceramic housewares in the Ottoman style
5. Overhead projector to show transparencies or projection capability for internet images
6. Transparent paper (9" by 11") for tracing
7. Student's transparent paper with the Ottoman motifs from Part 1
8. Sharp pencil
9. Slab of white clay (Steve's White with Barium was used by this teacher another choice is Gray Laguna EM214 with sand) precut to 6" by 6" size tile (1 cm. thick) ready for student use by Session Two. There is some shrinkage when tile is fired.
10. A selection of underglazes for bisque ware. Have a number of greens, blues, turquoises and an orangy-red available. (Duncan's Concepts was used by this teacher with nice results.)
11. Cement boards for drying the tiles on without warping
12. Small sponges to smooth the surface and sides of the tiles
13. Plastic sheeting to cover the tiles for slow drying process
14. Vocabulary list
15. Optional, but very helpful, for the long glazing process - Classical Ottoman music or contemporary Turkish singers such as Sezen Aksu, Izel or Tarkan to play during student work time.

Estimated Time for Part 2:

Total of 6 class sessions (if each is 45-50 minutes)

Lesson Outline Part 2:

Session One

1. Show a number of examples of Ottoman tiles and, if possible, some contemporary examples. Ismail Yigit's work is applicable as some of his examples are not exact copies of the Ottoman motifs, but rather an example of adapting them in new ways.
2. Explain to the students that it would be a good challenge to apply the motifs that they have already created for their paper tile to their clay tile. (This would be a fine lesson for any teacher who wishes to see the paper tiles transformed to clay! The transparent paper that they used for their paper tile is ready to be traced directly on to the clay.) But, in order to conceptually apply what the students have learned in Part 1, it would be an even more powerful experience for them to make observations of the flora in their own environment and work out stylized renditions of what they see. (Here in Tucson, in the Sonoran Desert, it was exciting to see stylized saguaros, saguaro flowers, prickly pears and agaves on the student tiles!)
3. One option is to have students come to the first session with sketches of at least three local plants (at least one of them can be a flower) and then work on simplifying these drawings and stylizing them in class.
4. Another option is to have pictures of local plant-life available on the tables for students to choose from. Have them sketch some examples and choose the three that they like best. (**Extension:** Take students on a walk outside with a sketchbook to draw the plant-life that they come across.)
5. Students should simplify and stylize their motifs.
6. Have students trace onto a new piece of transparent paper, the 6" by 6" square and four triangles within it from the transparent paper from Part 1. They must tape the new paper on to the old one so that the tracing is precise.
6. Demonstrate how to follow the composition they already had with the Turkish flora motifs from the transparent paper below. They can draw in the new stylized local flora motifs that they just created on their new transparent paper. Remind them to create this on only one triangle of the four. Also remind them that one of the motifs should be bigger than the other two.
7. Students work on creating a new transparent paper with all four triangles

completed in either rotational or bilateral symmetry, using the same methods they learned in Part 1.

Session Two

1. Students will probably still need time to trace all four triangles with of their local nature motifs.
2. They should color in at least one triangle in order to know what glazes they will use. (I chose to follow the classical Ottoman color schemes but using the greater variety of greens that are available in our glazes today.)

Formative Assessment:

1. Have students partner up and share their plans with one another. Pass out a checklist for students to assess their partner's plan for their clay tile. Decide if students should write or just discuss.
2. Partner Checklist:
 - a. My partner has three natural motifs in each triangle
 - b. One motif is bigger than the other two
 - c. My partner can explain what choice of symmetry he/she has implemented
 - d. I can identify my partner's motifs for what they represent in our environment
 - e. Outlines are sharp and clear
 - f. Color scheme is in the Ottoman style

Session Three

1. The students should carefully cut the 6" by 6" square from the rest of the tracing paper and have this handy.
2. Demonstrate how students should carefully pick up the clay tile to incise their name on the back and put down again with the clean surface facing up. Show them how to smooth the surface and sides of the tile using their fingers and then a small damp sponge.
3. Show them how to position the cut out transparency square precisely onto the 6" by

6" clay tile. The pencil marks must be facing down on the clay in order for the motif outlines to be transferred. They can apply a few dabs of water with one finger to the surface of the clay so that the tracing paper will adhere to it without shifting once they try to draw.

4. Demonstrate tracing the motifs with a sharp pencil on top of the transparent paper, applying enough pressure so that the pencil marks get transferred. This is an extremely slow process. Prepare the students to be very methodical and patient. (Relaxing music really helps.)

5. **Warn the students** - Not to shift the transparent paper at any time while they are tracing onto the clay or they will ruin their symmetry. It is almost impossible to reposition the paper again in the right way. They may have to smooth out the surface of their tile, reposition the tracing paper on top and start over if this happens.

6. It may be wise to trace with a pencil of another color so that they can check that they have traced all the motifs on all four triangles before lifting up the transparent paper.

7. Once they lift the transparent paper off the clay, the tiles should appear to have penciled outlines of their whole design that are slightly indented (or lightly incised) into the clay. Let the tiles dry completely before placing in the kiln.

8. Fire at cone 04.

Session Four and Five - Glazing

1. Gather students for a teacher demonstration of glazing process. Unlike the paper tiles, we will not try to paint the outlines of the motifs. (This may take more fine-motor skill than even most adults have! This is why those artisans of antiquity were so greatly revered.) Show how to start with one color and paint all the motifs that appear in that one color. They must apply the glaze thickly. Let the first coat dry and paint a second and then a third coat. They can use wet tissue paper to wipe away any marks that go outside of the outlines.

2. At the end of each session, have students write a note to themselves with the name/number of the glaze and how many coats they painted to keep track for the next session. This note can be placed underneath their tile.

3. Leave the background for last. This way the students can clean up any glaze that was painted outside of the outlines one final time. The background must be glazed as well even if the background color was white.

4. Remind the students to paint on their glazes half way down the side of the tile.
WARNING: Do not let any glaze get on the bottom of the tile or in the lower half of the sides. This will cause the tile to be permanently adhered to the kiln!

5. Have students thoroughly wipe off any glaze that may be on the bottom of the tile with a small sponge. Teacher should double check this.

Assessment:

Grading Rubric for Ceramic Turkish Tiles:

4

- Tile is uniformly smooth
- Tile clearly displays either bilateral or rotational symmetry
- At least three stylized floral or vegetation motifs are present with a bigger one for primary focus
- Motifs are carefully glazed inside the outlines in appropriate Ottoman color-scheme: blues, greens, turquoise and also red or orange for accent
- Color is applied in a smooth, solid manner so that none of the bisque ware is showing

3

- Tile is almost uniformly smooth
- Tile is close to being in either bilateral or rotational symmetry
- At least three stylized floral or vegetation motifs are present but no primary focus
- Motifs are less carefully glazed inside the outlines, in partial Ottoman color-scheme. There is either no red/orange accent or too much use of red/orange
- Color is applied in a mostly smooth, solid manner, but some of the bisque ware is showing

2

- Tile is somewhat smooth
- Tile is far from being in either bilateral or rotational symmetry
- There are less than three or too many floral or vegetation motifs. Not well stylized.
- Motifs are not carefully glazed inside the outlines only partially in the Ottoman color-scheme.
- Color is applied in an inconsistent manner and bisque ware is showing

1

- Tile is not smooth
- Tile does not employ any type of symmetry
- Motifs are not well drawn or stylized.
- Motifs are haphazardly glazed.
- No clear color-scheme is applied.
- Bisqueware is showing in many places

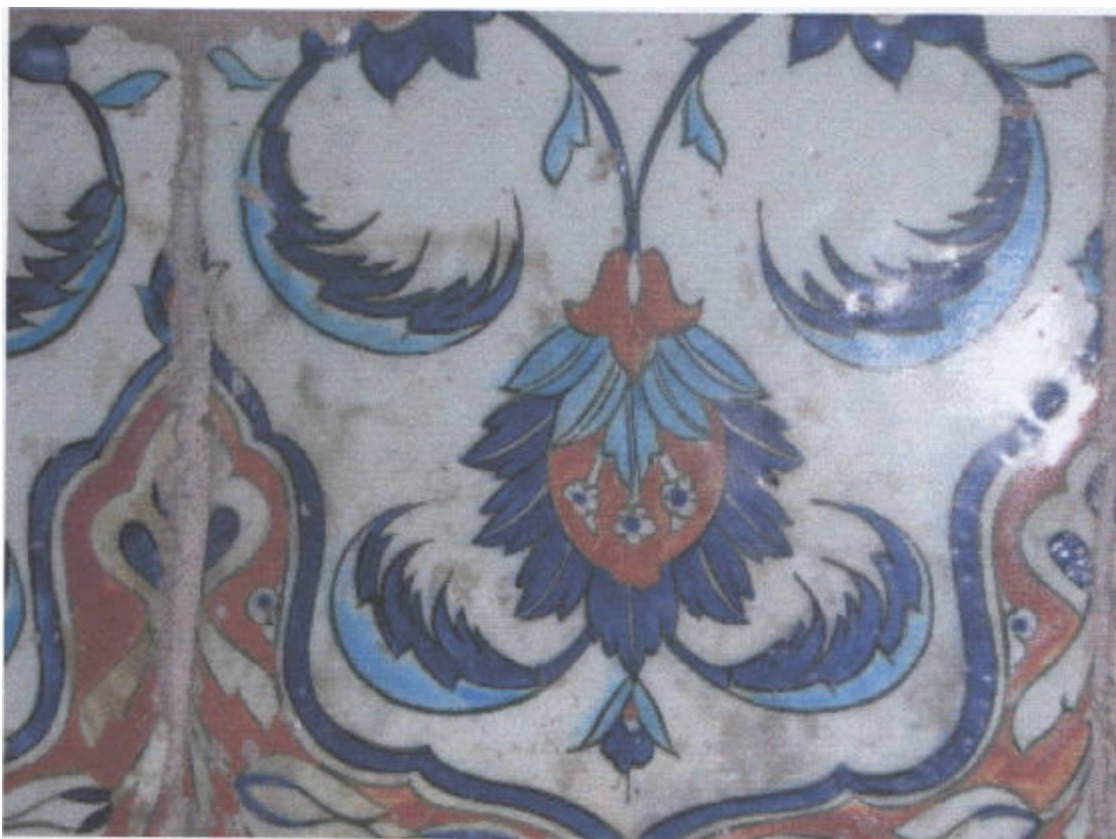
Extension and Follow-Up Activities:

1. These tiles can be placed in a permanent installation at the school. The students can tell their school mates what the lesson was about during a dedication ceremony.
2. A lesson on Ottoman architecture can go hand-in-hand with this lesson. Nature is an inspiration for the architecture during the golden era of Ottoman art. The flowing organic forms - curved domes, archways and minarets - make for an interesting comparison with Western streamline, grid based structures. Again the cultural spread can be seen as the architecture in the American Southwest is influenced by Mexico, our neighbor to the south, which in turn was influenced by Spain, which in turn was influenced by Ottoman architecture via the Moors.
3. A snack of Turkish chai (tea) and Turkish delight will make the glazing process more appealing. These treats can also be given out at the dedication ceremony for the installation.
4. Look at modern day Turkish ceramic artists. The modern art museum in Istanbul called Istanbul Modern and the Caferaga Medresesi a school for the Ottoman arts in Istanbul are both good sources for information: www.istanbulmodern.org and www.tkhv.org

Fig. 1 A tile wall at the Topkapi Palace



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Fig. 3 A wall of tiles (with evil eye) from the Topkapi Palace



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Fig. 4 Tiles at the Topkapi Palace



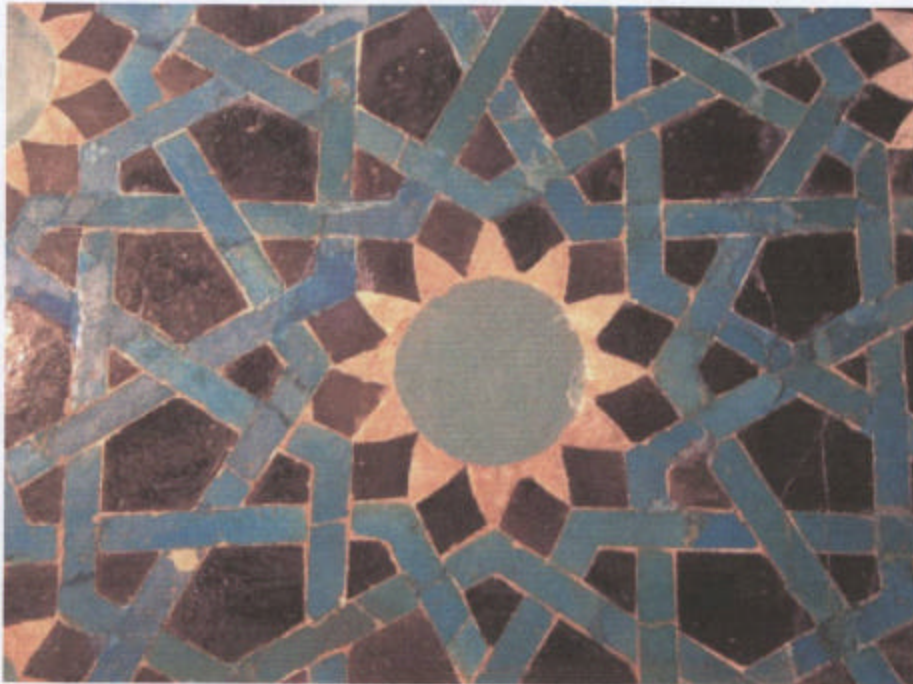
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• Fig. 5 Topkapi Palace tiles



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• Fig. 6 Tessellation and rotational symmetry, The Istanbul Antiquities Museum



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Fig. 7 Tessellation of tiles, Istanbul Antiquities Museum



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Fig. 8 Newer tiles in Ottoman style showing tessellation and geometric motifs, Buyuk Ada



Sherman 6/05

• Fig. 9 Newer tiles in Ottoman style, Buyuk Ada



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Fig. 10 Ottoman style tile by Ismail Yigit



• Fig. 11 Ismail Yigit



• Fig. 12 Contemporary artist working in the Ottoman style in Cappadocia

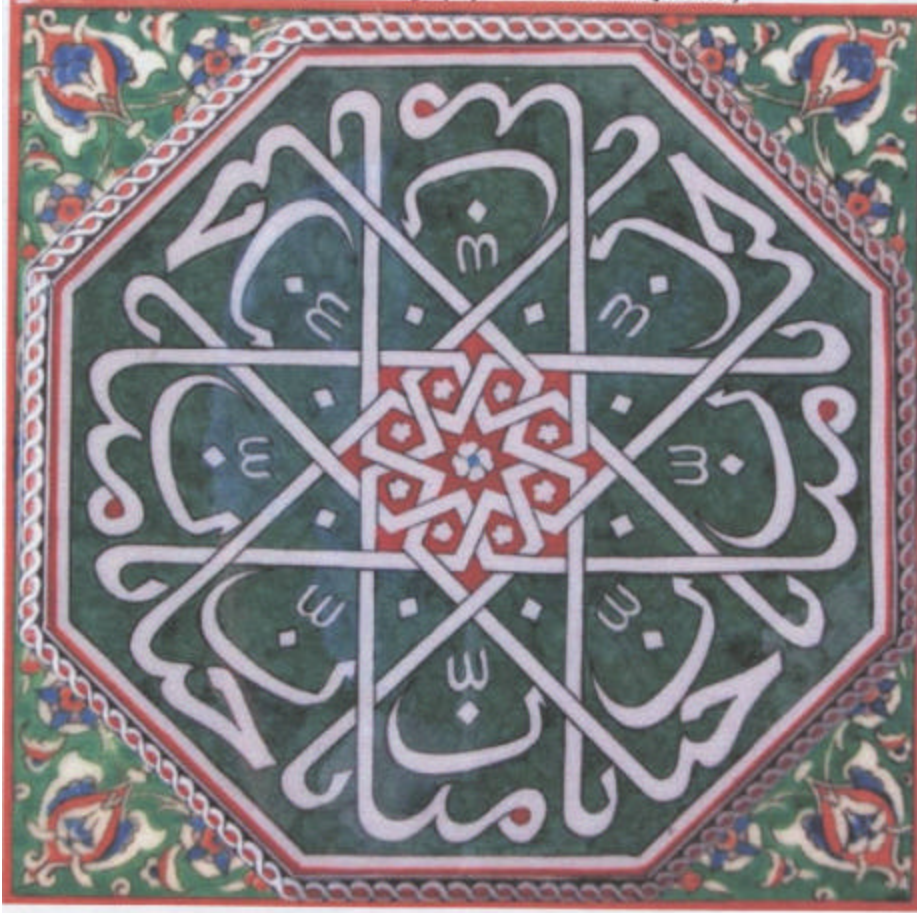


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• Fig. 13 Ismail Yigit - bilateral symmetry



Fig. 14 Ismail Yigit - Example of calligraphy and rotational symmetry



• Fig. 15 Ismail Yigit - Example of rotational symmetry





• Fig. 16 Interior of The Mosque of Sultan Ahmet (Blue Mosque)

Fig. 17 The Mosque of Sultan Ahmet (Blue Mosque)

