Cerámica y Cultura: The Story of Spanish and Mexican Mayólica
Teacher Resource Guide for grades K – 12

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Adapted from exhibition label text and lesson plans by Aurelia Gomez, Director of Education

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Overview

This Teacher Resource Guide was developed in conjunction with a traveling exhibition, *Cerámica y Cultura: The Story of Spanish and Mexican Mayólica*, which opened at the Museum of International Folk Art in November 2002. This exhibition and the guide that accompanies it present an opportunity for educators, grades K – 12, to look deeply into the forms and functions of *mayólica* objects to understand more about the cultures that formed the pieces and the history of the times in which they were produced. The Iberian peninsula, where mayólica reached it's apogee with lusterware, was composed of a wide variety of cultures, religions and ethnicities. Looking into the history and beliefs of these peoples gives all of us a greater understanding of how to get along as a global community today. Tracing the trade routes of these ceramic pieces and witnessing how the Mexican culture transformed this art form is an excellent example of vibrant intercultural exchange. Using this resource guide as an impetus to study cultures through objects and as a jumping off point for developing creative expression in students is an informative way of assisting young people to comprehend who they are in relation to history, culture and artistic expression.

Educational Objectives:

Teachers and students will understand that the study of mayólica informs us about the history of the times in which it was created, the politics of those times, the dominant religions, the dress of the period, foods that were popular and the influences of the cultures that created it.

Teachers and students will understand that the creation of mayólica embodies relationships between diverse cultures and religions such as: Christians and Muslims, Spanish and Italians, Asians, Mexicans and Native Americans.

Teachers and students will experience the way that the spread of mayólica illustrates trade patterns and Spain's global interactions.

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Teachers and students will comprehend the processes that are involved in the creation of mayólica.

Teachers and students will comprehend the changes the mayólica tradition has undergone and the sources of inspiration of contemporary mayólica artists.

The following standards are addressed in the lesson plans:

National Standards for Arts Education
Content Standards for the Visual Arts Grades K – 12

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

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Introduction

Oficio noble y bizarro	Noble and gallant profession
Entre todos el primero	The first among others
Pues en las artes del barro	For in the art of clay
Dios fue el primer alfarero	God was the first potter
Y el hombre el primer cacharro	And man the first pot.

Spanish proverb

Ceramics mirror culture. Many ceramic objects are used everyday, the plates we eat off of, the cups we drink from. Their forms and decorations are a visual and physical presence which reflect economy, society, politics and religion. This is especially true of *mayólica*, whose polychrome palette likens it to a ceramic version of the painted canvas.

Posset Pot / *Orza para "posset"*
ca. 1680, England
International Folk Art Foundation, Santa Fe

Two-handled spouted pots were common vessels made for posset, a hot drink made of milk, liquor, sugar, spices and other ingredients, that was popular in the 17th century as a delicacy and as a remedy for colds. The sloppy concoction was partially spooned out and partially sucked through the spout.

The origins of European mayólica lie within Spain. Spanish mayólica became, for a time, one of the world's most coveted ceramics. Prized for its aesthetic qualities, mayólica also acts as a visual history. Encoded in its colorful forms and lusters, we find evidence of Spain's early encounter with the Islamic world, her later alliance with the Christian world, and her political and economic ties with northern Europe and the Mediterranean world. Elements of daily life in Spain -- diet, cuisine, costume and custom are also revealed. Mexico transformed this ceramic art form to reflect its distinct and vibrant culture.

Plate / *Plato*
1800-1900, Manises, Spain
Gift of the Heard Museum
Museum of International Folk Art, Santa Fe

What is mayólica (pronounced my yo leek ah) and why are there so many ways to say and spell it? Mayólica is a Spanish term which refers to a specific type of glazed earthenware pottery. Earthenware forms are bisque-fired and coated with a glaze made out of tin and lead oxides which produce an opaque white surface that obscures the color of the clay and creates a white surface to embellish. The term mayólica is synonymous with Italian maiolica, English majolica, French

faience, and Dutch delft. Pronunciations reflect the spelling and linguistic traditions of each region. In Spain and Mexico it is often called *loza* or *talavera* (after the Spanish ceramics center located in the town of Talavera de la Reina). Some scholars suspect the word mayólica is derived from "Malíca," the historic name for Málaga, a Spanish town that produced early tin-glazed ceramics. Others believe that the term was coined after an Italian change in pronunciation of Mallorca, an island which shipped these ceramics throughout the Mediterranean. Whatever the case, the term mayólica describes a distinctly Spanish pottery, and indicates Spain's prominent role in its artistic creation.

Questions for discussion

1. How and why do everyday objects tell us about the culture that produces and uses them?
2. What does your household use everyday that reflects culture or tells a story?
3. What ceramic objects do you use at home? Where are they from? Do you know who made them?

Islamic Origins of Spanish Mayólica

"Although the Arabs were finally defeated and expelled (from Spain), their presence during eight centuries created a bicultural experience unique in Western Europe… to this day, fully one quarter of all Spanish words are of Arab origin. Even in the bullfight, we use an Arab word to salute the matador, for ole! Comes from the Arab word *wallah*."
Carlos Fuentes, The Buried Mirror

The story of Spanish mayólica begins in Islamic Spain. In 711 Arab invaders brought Islam to the Iberian peninsula from northern Africa. For the next 800 years, as Muslims and Christians fought for control of what was to become Spain, Islamic culture became firmly established. New agricultural techniques and medical knowledge, as well as the new art form of mayólica were introduced.

Deep Dish / *Brasero*
1410-1480, Manises, Spain
International Folk Art Foundation, Santa Fe

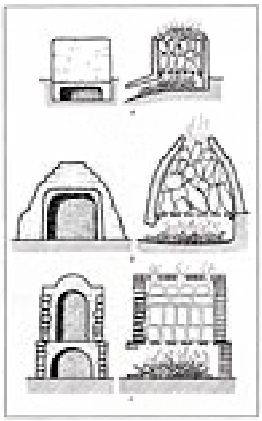
How did mayólica come into being? The earliest glazes developed in the Near and Middle East were of lead. These glazes were transparent, but by adding certain minerals, such as manganese-brown or copper-green, an overall shade was created that would hide the color of the clay. However, designs could not be painted in lead glazes as they would run. In the 9th century a remarkable discovery was made: by adding tin oxide to the lead glaze, an opaque white surface was created that could both cover the clay color and be used as a paint surface. This quality of opaqueness is unique to mayólica. The effect enabled potters to mimic Chinese porcelain and it became immensely popular. These new techniques spread quickly and widely. Mayólica was being produced as early as the 10th century in Spain.

Lusterware Plate / *Plato de reflejo metálico*
1675-1800, Manises, Spain
International Folk Art Foundation, Santa Fe

In the 11th century, Muslim potters living in Spain began to produce lusterware (*reflejo metálico*) by adding copper and silver oxides to tin-glazed mayólica surfaces to produce an iridescent metallic decoration. Spanish lusterwares were shipped to England and the Netherlands, as well as Egypt and other ports around the Mediterranean. The beauty and craftsmanship of lusterware catapulted the Spanish ceramics industry to prominence. Even as Christianity began to take hold in Spain, the artistic excellence of the Islamic craftsman could not be ignored. As Muslim artists worked increasingly under Christian patronage, a new style developed in all the arts that reflected both cultures: *mudéjar*, or "hispano-moresque."

Bowl / *Cuenco*
1800-1900, Fajalauza district, Granada, Spain
International Folk Art Foundation, Santa Fe

The contributions which came from the Islamic Arab world included the potter's wheel, a style of kiln known as the *horno árabe*, the techniques for producing tin-glazed earthenware as well as the introduction of glazed ceramic tiles used to decorate architectural structures. What are other elements of Islamic art that infuse the forms of mayólica? Islamic artists are followers of Mohammed (c. 570 – 630), the founder of Islam. The important texts of Islam are the Qu'ran and the Hadith. Artists are discouraged to create figurative images as they are forbidden in the mosque. Therefore, Islamic artists tend to work with purely decorative, non-figurative forms. Script and calligraphy are regarded as very high art forms because of their association with the Qu'ran. Geometric figures, stylized vegetal motifs (the arabesque) and non-representational designs became a dominant part of Arab artistic inspiration. Islamic art is often characterized by the term "horror vacui" or the fear of open spaces. Highly intricate patterns and decorative motifs, often the use of dots on mayólica forms, are an element that distinguished the influence of Muslim artisans. Islamic culture emphasized the role of the artist as part of a larger tradition, one with exacting standards and established design frameworks and techniques. Patterns and design were passed down from masters to apprentices to people who made humble utilitarian objects for everyday use. Even mundane objects, such as plates and bowls are embellished to show an appreciation for all aspects of everyday life.



Arab kiln / *Horno árabe*
Illustration adapted from Lister & Lister, Andalusian Ceramics in Spain and New Spain, 1987.

Questions for discussion:

1. What ideas and/or expressions that change our current technologies come from other countries or other cultures? (Think about computers, the automobile industry and music.)
2. How does one invention trigger change?
3. What are your favorite inventions and when were they invented?

Calligraphic Plates

Objectives

1. Students will understand that calligraphy is a significant element of Islamic art and that it was used to decorate mayólica ceramics (historical and cultural understanding).
2. Students will recognize stylistic elements of Islamic calligraphy and design (perceiving, analyzing and responding).
3. Students will make their own plate design utilizing calligraphy as a decoration (creating and performing).

Materials

This project may be done as a simple design project or as a completed ceramic object. You will need newsprint, drawing paper the size of the plate to be designed or made, drawing pencils, erasers, compasses and markers or colored pencils. If your students will be completing plates you will need clay, tools, water, a kiln, glazes and brushes.

Motivation

1. Islamic artists use calligraphy to decorate objects of everyday use such as plates, bowls and tiles. Often the common wares are embellished with prayers or other words of inspiration. Show your students examples of mudéjar mayólica, or decorated ceramic objects and ask them if these decorations change our perception of everyday objects. Ask your students what objects they use everyday and how the objects are decorated. Do the decorations have an effect on them? How do they feel about writing as a decoration?
2. Look at Islamic calligraphy (look in the resource section for books on Islamic art) and/or other calligraphy and have your students analyze the forms. Translate some of the phrases (if possible) and discuss their meaning.
3. Direct your students to form small groups and discuss words and/or phrases that inspire them. The groups can write down their favorites and share them with the entire class.
4. Explain that the students are going to decorate a simple plate form with an inspiring word or phrase using calligraphy. Have each student use their own idea or select a word or phrase that had been discussed by the group.

Procedure

1. Students can develop a calligraphic style that relates to the content of their inspiration word or message by drawing and sketching on newsprint.
2. Once they have their idea sketched out they can draw the circumference of a plate on the drawing paper using a real plate or a compass.
3. Students will transcribe their calligraphy onto the circular form of the plate. They can repeat their calligraphy to fill up the plate or just write it once.
4. To color in the design with colored pencils or markers, students can work with the negative spaces as well as the calligraphy.
5. If you are working in a ceramics studio you can either have the students make plates, fire them and glaze them with the calligraphic design or have your students paint in glaze on purchased bisqued plates and fire them.

Evaluation
Make a display of the plates and/or the plate designs. Have students create sentences, poems or stories using the phrases that their classmates have written onto their plates.

Create a large plate or a large plate shape on paper. Have each student draw or paint their calligraphic element on the plate or plate shape. Display in the class and discuss the different stylistic elements and meaning of the words. Students can evaluate the aesthetics of combining a variety of stylistic forms.

Extensions & Connections
Have students look for calligraphic forms in historical documents, book arts, signs, and typography. They can report back to the class on the forms they have found and the effect that calligraphy has in each instance. (Visual Art, Art History)

Students can research the different styles of writing that have developed throughout the ages, cuneiform, the Phoenician, Greek, Roman, Hebrew, Medieval, and modern alphabets. They can use those alphabets to write messages, phrases or single words. (History)

Have students look at different forms of modern typography. They can create posters which group similar and/or different type faces together and analyze their forms. Have them create new fonts and typefaces. (Visual Art & Communication)

Have students make cups that reflect their culture. Every culture drinks beverages and uses decorations. There are many overlaps and distinctions. Some cultures drink more coffee than tea. Some cultures use cups with saucers and others just use cups. Have students think about what distinguishes them and their culture and create and decorate a cup which reflects that. They can display their "culture cups" and celebrate. (Visual Art)

Arabesque Assemblages

Objectives
1. To identify the arabesque as pertaining to Islamic design (historical and cultural understanding).
2. To see how arabesques are used in art, architecture and dance (perceiving, analyzing and responding).
3. To create a work of art which incorporates an arabesque (creating and performing).

Materials
Small boxes such as shoe boxes, cereal boxes and Kleenex boxes, collage and assemblage materials such as magazines, newspapers, wrapping papers, stamps, pencil and paper, paint, brushes, cray-pas, scissors and glue. Newspapers to protect tables and water for paint.

Motivation
1. Show students images with the arabesque form, including drawings, painting, architecture and dance. Discuss the elements of the form: geometric, floral, and the way they are intertwined. Tell students that the arabesque is a classic Islamic design form, usually a stylized organic form which can stand alone or wind around other design elements. Discuss the term in relation to its culture and the emphasis on non-figurative visual elements in Islamic art.
2. Have students discuss the arabesque forms that appeal to them most and articulate what they find pleasing or attractive about the way that they are used. Explain that students will be using an arabesque form in an assemblage or collage project that can be a decorative or functional piece.

Procedure
1. Students can draw their own arabesque forms or find images of them in magazines or newspapers. They can use a box as an architecture basis for a structural piece that represents some type of building or container. Or they can deconstruct the box and just use the cardboard to create a flat 2 dimensional surface.
2. Students arrange their drawn and collected images to create a collage or assemblage that includes at least one arabesque element.
3. Have students adhere their images to the cardboard and then draw and paint and adhere additional materials around them until they have completed their projects.

Evaluation
1. Create a display of the arabesque assemblages. Have students identify the arabesque elements and how they were integrated into the pieces. They can discuss the different ways that students utilized the arabesque forms and which one they find most effective in conveying a message or as a design element.
2. Have students create isolated images of the arabesque forms that they used in their assemblages using drawing materials. Display the drawings and have the students use the images for a free association writing project.

Extensions and Connections

Have students look at their immediate environment, school, home, town, and community building to identify different styles of doorways, facades, gates and windows. They can photograph or render what they see. Have them group their photographs or drawings according to style and function and then determine the cultural influences of their groupings. (Art and Architecture)

Read poetry or short stories that use plant imagery as a central theme or subject. Select a poem or story to illustrate and display the illustrations alongside the poetry. (Literature)

Bring in different types of houseplants for students to use as the basis of a still life. Students can draw a picture of the entire plant and then isolate a few parts of the plant to use repeatedly to create an overall pattern or design. (Visual Art)

Have students create typefaces that are embellished with plant forms. Have them select a word or a phrase to illustrate using the vegetal typeface. Display the work and comment of the effect. (Art and Visual Communication)

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Trade & Transformation

Plate / *Plato* (with galleon)
1600-1700, Barcelona, Spain
Museu de Ceràmica, Barcelona

For 500 years after its introduction to Spain, mayólica was based primarily on Islamic design. In the late 15th and early 16th century three main events contributed to a shift in the cultural influences of mayólica. 1. The first ocean trade route to Asia was discovered by the Portuguese; this greatly increased the access to Chinese porcelain. 2. The expulsion of the Jews and the Muslims from Spain left huge gaps in the ceramics workforce. Italians relocated to Spain and brought their figurative and narrative painting techniques to the mayólica canvas. 3. The discovery of the Americas prompted the Spanish to bring their ceramic techniques to Mexico. Spanish ceramists introduced the horno árabe and the kick wheel to their Mexican counterparts as well as the art of tin-glazed earthenware ceramics soon after their arrival. There, indigenous potters combined Spanish, Chinese and Pre-Columbian designs to create a thoroughly Mexican style.

During the 16th century the blue-and-white porcelains of the Ming dynasty arriving on Portugese ships became immediately popular and European potters embraced and imitated the palette, patterns, motifs, and designs. In Spain, this influence lasted over two centuries, with blue-and-white tableware becoming the bread and butter of Spanish potters.

Shortly after the first Spanish settlements were founded in the Americas, Spanish ceramics became a standard item on the shipments brought to the colonies. Pottery was sent both as merchandise and container aboard the Spanish galleons. The most common form was the "olive jar," a plain or bisque ware used as a container for shipping liquids such as olive oil and wine. Mayólica, however, was sent more often as merchandise or as the personal property of passengers. Jars, inkwells, candlesticks, cups and chamber pots were among items shipped to Veracruz, Mexico, from Seville and Cádiz. Sevillian tiles were also used as ballast, taking the place of bags of sand that could not be sold at their destination.

Olive jar / *Botíja*
1700-1800, Guatemala
Gift of Dr. Sylvanus G. Morley, Museum of International Folk Art

Shipments in 1590 from Seville to Cuba, the Dominican Republic, Mexico and Colombia included:

10 vasos de loza de Triana	10 mayólica cups from Triana (Seville)
una caja de loza blanca de Sevilla	1 box of white Sevillian mayólica
200 vasos de loza blanca de Triana	200 white mayólica cups from Triana
12 cajas en que van 419 docenas de platos y escudillas azules de Talavera	12 boxes in which are 419 dozen blue plates and porrigers from Talavera
2 cajas de loza de talavera azul y blanca	2 boxes of blue and white mayólica from Talavera
200 vasos de loza de Triana	200 mayólica cups from Triana

Lister & Lister, Andalusian Ceramics in Spain and New Spain, 1987

These pieces, which incorporated Islamic, northern European and Chinese designs and motifs would have served as models for Mexican potters.

Plate / *Plato*
1650-1700, Puebla, Mexico
Houghton Sawyer Collection, Gift of Mr. & Mrs. John F. Holstius, Museum of International Folk Art, Santa Fe

Following the European re-conquest of the Iberian peninsula in 1492, Muslim influence on Spanish ceramics diminished. In the 16th century, as Italian merchants brought Renaissance pottery to Spain, the potters themselves began to relocate. Under their influence, Spanish mayólica designs began to change from the predominantly geometric Islamic style to an Italian Renaissance style that became known as "pisano" (after the Italian city of Pisa). One important contribution of the Italian Renaissance potters was to treat tile panels as canvas. Historical, mythological and religious scenes were introduced, along with widespread use of the human figure. Both Italian and Flemish potters helped to extend the traditional Islamic color range of greens, blues, purples, and browns, to include yellows, oranges and varying hues.

"Coming from the Oven" / *"Camino del horno"*
ca. 1830, Valencia, Spain
Museo Nacional de Cerámica y las Artes Suntuarias Gonzáles Martí, Valencia

Styles

Over the years, the names of particular towns in Spain and Mexico have become associated with mayólica, different towns gaining prominence in different eras. In Talavera de la Reina, Spain, the polychrome Renaissance style pottery catapulted its potters to fame. In Manises it was lusterware and in Sevilla, tilework. Mexican potters in Puebla developed a blue-and-white style so successful that it persisted for two centuries, while Guanajuato became known for its colorful floral designs. The characteristics which identify a regional style were developed over time and are the result of a series of distinct influences from diverse cultures.

Maps of style centers (with images of pots and names of towns under them)

At the beginning of the 18th century, the French court of Louis XV was at the forefront of European fashion. French paintings, furniture, architecture, and room décor were adopted throughout the continent, and new ceramic forms, along with pastel colors and delicate floral patterns, began to replace the bolder dense designs of the Renaissance and Baroque periods. The town of Alcora in the kingdom of Valencia became the center for production of Spanish ceramics in the French style.

Soup Tureen / *Sopera*
1749-1770, Alcora, Spain
Museu de Ceràmica, Barcelona

In Mexico, Spanish potters introduced the potter's wheel, the closed kiln, and glazes to an already thriving indigenous ceramic tradition. Hispano-Islamic-Christian-Renaissance forms and designs were blended with those of indigenous Mexican origin. Even the early mayólica produced in Mexico did not faithfully follow Spanish models but began to have an aesthetic all its own. The loose brushwork, the combinations of motifs, the varying application of paints and glazes are elements that became part of Mexico's distinctive artistic expression.

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In 1565, Spain opened trade with China and the Spice Islands (Moluccas) through her colony in the Philippines. For the next two and one-half centuries, the Manila galleons criss-crossed the Pacific – known as the Spanish Lake – bringing silks, porcelains, and spices to New Spain. As the Pacific port of Acapulco, the galleons' cargo would be off-loaded and packed on donkeys for the long journey across Mexico to the port of Veracruz. There the goods were put back on ships to continue their journey to Spain.

During the trip across Mexico, many of the porcelains destined for Spain were waylaid and sold to local bourgeoisie. These vessels served as models and inspiration for the regional mayólica potters who soon incorporated the exotic designs and motifs into their own ceramics. This combination of Spanish techniques with Chinese vessel forms and a blue-and-white color scheme, coupled with indigenous Mexican motifs, such as the nopal cactus and the quetzal, produced a mayólica that is uniquely Mexican.

Storage Jar / *Tibor*
1700-1750, Puebla, Mexico
Houghton Sawyer Collection, Gift of Mr. & Mrs. John F. Holstius
Museum of International Folk Art, Santa Fe

Questions for discussion:

1. How many people have traveled to another country? How did it feel to be in a place where another language was spoken? How did you communicate? What did you bring home? What did you remember the most?
2. How quickly do think cultures are influencing each other today? Why? Where do you see evidence of cultural exchanges?
3. Do functional objects that are decorated appeal to you? Why or why not? Why do artisans decorate what they make?
4. Why are there differences in styles based on geography?
5. What are your favorite styles in fashion and/or visual art? Where did you see them?
6. How has modern transportation and high speed communication changed our concept of the world?

Ceramic Cargo Vessels

Objectives

1. Students will understand that ceramic vessels were used as cargo vessels during the Colonial period to ship food products from Europe to the Americas (historical and cultural understanding).
2. Students will see how ceramic vessels were designed to function as cargo vessels in ships (perceiving, analyzing and responding).
3. Students will make their own ceramic vessels to carry materials from one place to another (creating and performing).

Materials

This project can be a design project that is completed with pencil and paper or a ceramic project that is executed with clay thrown on a wheel or constructed by hand. You will need pencils, paper and erasers, colored pencils or markers for drawing, clay, clay tools, water, wheels, a kiln, glazes and brushes.

Motivation

1. Discuss with your students the role of the Manila galleons in relation to trade and cultural exchange. Point out that the olive jar of the 16th century was the equivalent to the cardboard box of today.
2. Look at magazines, newspaper and books to find images of objects used to carry and convey other things. Discuss the elements of design with your students along with durability, stacking and production.
3. Tell your students that they will be inventing a ceramic vessel form which will be used to convey objects from place to place. They can pick an era other than today to work with. Their ceramic vessel could be used on a boat or ship, a train, a plane or on some conveyance that will be in our future. Students should identify what they are putting in their vessels. The vessels should be designed for durability and function.

Procedure

1. When students have selected an era to work with, a mode of transportation and at least one material to convey they can begin sketching ideas for a ceramic vessel form.
2. Color in the form with markers or colored pencils.
3. Create the form out of clay or draw the form in context, in other words, being used in the setting for which it was designed.
4. Bisque and glaze and fire the completed ceramic form.

Evaluation
Create a display of the drawings showing the ceramic cargo vessels in their context and/or the vessels themselves. Discuss the time frames that students have selected and the different solutions to the problem of creating a ceramic cargo vessel. Have students select the vessel that seems the most efficient, the most aesthetically pleasing and the most durable.

Create ceramic vessels to use for storage in your classroom and/or school. Use them.

Extensions and Connections
Students can research the tools that were used on the Manila galleons during their ocean voyages. Sixteenth century sailors used moondials, sandglasses, astrolabes, quadrants and wooden compasses to navigate and access their speed. Students can compile their information and indicate what tools are currently used on ships crossing the ocean for navigational purposes. (History).

Students can research shipwrecks off of the coast of the Americas. They can create lists of what has been found at the bottom of the sea. Have them report on what people traded and what the values of the trade items relative to each other were. (History).

Captains kept logs in which they recorded the events of their ship's journey. Have students select a time period, a route and ship to write about. They can think of themselves as the captain and create a log which chronicles the events of a voyage. (Language Arts).

Mayólica Blue and White (Painting on plates)

Objectives

1. Students will comprehend that the use and design of ceramic tableware has evolved over time and reflects the technologies and cultures in which it has been produced (historical and cultural understanding).
2. Students will recognize the design motifs and colors that are used to decorate mayólica ceramics (perceiving, analyzing and responding).
3. Students will use their own designs to decorate plates with paints or glazes (creating and performing).

Materials

This project can be done in a ceramics studio using bisqued plates or in a school that has no official art studio or classroom devoted to art. The steps in terms of decision-making and design are essentially the same, just the materials and products are different.

Chinette paper plates with a porous surface, watercolors (intense blue liquid watercolor is really helpful), brushes, containers for water, newspaper, pencils and erasers; or bisqued plates with underglazes in traditional mayólica colors (blue, black, green, yellow, orange or red and brown), clear glaze, brushes, water containers, newspaper, pencils.

Motivation

1. Discuss the use of ceramics as tableware. Pass around examples of plates that are made out of plastic, paper and ceramics. Look at the way they are decorated. Look at for design ideas and inspiration.
2. Explain that the students will be decorating plates using the palette that mayólica artists use – black, blue, green, yellow, orange or red and brown. They can create designs that are floral or geometric. They can depict a scene or write an inspiring message. Their plate can be one that is used everyday or just for special occasions.
3. Look at images of plates with central designs to see designs that radiate out of the center, overall pattern, a scene and use writing for inspiration.

Procedure

1. Have students draw their designs on either the bisqued plates or the paper plates with pencil. They can decorate the back of the plate as well and sign their name in the center.
2. Apply underglazes or blue watercolor first (in some classes you may want to limit the palette to just blue and white). Leave unpainted any spaces that students want to be white. Then add other colors, completing the design.
3. Let dry.
4. Cover underglazes with clear glaze and fire.

Evaluation
Create a display of the plates with labels indicating each artist as well as the motivation behind the design of the plate.

Make an oversized plate out of clay that an entire class can decorate. Or distribute paper plates to small groups of students to be decorated by committee. Display the plates and discuss how they came up with their designs and how they divided the labor. Do they feel their groups efforts were successful? Why or why not?

Extensions and Connections
Have students draw pictures of the designs on the plates that they use at home. Gather their drawings and sort them according to styles. Have students create a graph or grid indicating how many people eat off of plain white plates, plates with flowers, etc. Have the class discuss the results in terms of economics, aesthetics and practicality. (Math & Social Studies)

Have students research the amount of water used to wash dishes on a daily basis and the amount of materials, energy and water that go into the production and use of paper and plastic plates. Ask them to determine which type of plate is more efficient to use from an environmental perspective. (Earth Science)

Some artists, notably Julian Schnabel, use broken crockery in their paintings and assemblages. Collect broken pottery or visit a second hand store to collect ceramics that can be broken. Have students come up with works of art that utilize broken crockery in its design and discuss the work. (Visual Art)

Potsherds are important links to the past. Anthropologists and archeologists are able to trace cultures and history based on tiny pieces of broken ceramics found in refuse piles. Take a walk in the school neighborhood or another areas accessible to you and your students where potsherds maybe seen. Have students draw pictures of the shards or collect them if that is allowed. Discuss what the class found or consult a local archeologist to determine what they were looking at. (Archeology)

Have students think of people they would like to commemorate by painting their portrait on a plate. It could be a famous person, someone they admire or a member of their family. They can use a paper plate to paint with watercolor or make a plate from start to finish or use a bisqued plate and paint with underglazes. Have them share their "portrait plates" with each other, discussing their motivation for selecting the portrait and their methods. (Visual Art)

Structure

The traditional Spanish potter's *taller* (workshop) was usually a family-run operation headed by a *maestro* or master potter. In small *talleres*, one or two family members might do all tasks; in larger workshops the work was divided; one person to throw or construct the pots, one to glaze, one to paint, someone to monitor the kiln, and someone to bring the fuel. The maestro might take on an apprentice, agreeing to feed and clothe him and take care of medical expenses for a number of years until he was ready to take the exam to become a journeyman and then a maestro.

Beginning in the 17th century in both Spain and Mexico, potters were regulated by *gremios* (guilds). The guild was a formal organization with regulations whose purpose was to provide quality control and to protect potters against inferior imitations of their work as well as price gouging. The regulations specified who could become a master potter, what his training should be, how long one must apprentice before having his own workshop and store, and what materials, designs and colors he could use.

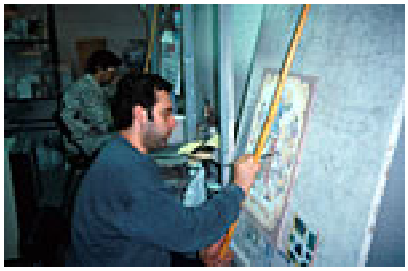
Production has changed since the industrial revolution and the introduction of new technology, such as kilns with thermostats and electric wheels. Materials have also changed as the world has become aware of the harmful effects of certain elements – particularly lead. But the designs of today's mayólica potters draws heavily on the past and carry this history into the present. Contemporary mayólica potters spend years studying the historic pigments, glazes, clays, forms, motifs and designs from the past and select those that to him or her make the most contemporary statement. Some workshops are single family or single potter operations. Others are larger, more commercial and industrial ventures. But regardless of their approach, passion for their art and all that it represents clearly shines through.

Alfredo Sánchez throwing pots. Artesanía Tradicional, Guanajuato, Mexico
Photo by Aurelia Gomez

Man dipping bisqued pieces into glaze. Talavera de la Reina, Cholula, Mexico
Photo by Aurelia Gomez

Painters applying pigment onto glazed pieces. Talavera de la Reina, Cholula, Mexico
Photo by Aurelia Gomez

Man painting with a rod. Fábrica Taller Cerámica Artistica J.A. Froilan, Talavera de la Reina, Spain
Photo by Judy Smith



Questions for discussion:

1. If you were the head of a guild how would you organize it and why?
2. Do you know of any guilds that exist today? If so, what are they and how are they structured?
3. If you were going to be an apprentice, what would you want to learn? How long do you think it would take you to become a master?

Cerámica y Cultura: The Story of Spanish and Mexican Mayólica
Teacher Resource Guide for grades K – 12

Designing a Signature Line of Ceramics

Objectives
1. Students will understand that mayólica ceramics are created in workshops by teams of people with specific roles and duties (historical and cultural understanding).
2. Students will see that mayólica workshops create distinctive lines of ceramics, which identify their style (perceiving, analyzing and responding).
3. Students will create a look for a group of related ceramic items (creating and performing).

Materials
Drawing paper, pencils, erasers, watercolors, brushes, containers for water, newspapers, or colored pencils.

Motivation
1. Discuss the use of *gremios*, or guilds with your students as a method of organizing the production of mayólica. Ask them if they are familiar with this type of organization in regard to any other tradition, traditional art form, or painting.
2. Have them determine what job they would like to have if they were part or a *gremio*. Would they be in charge? Would they apply glaze, wedge clay, throw the pots or paint the final design? Have them form groups according to how they would work the best. Some students may want to work alone and imagine themselves in charge of their own taller. Other may form a family operated taller. Still others may be part of a larger, more industrial style taller.
3. Look at images of contemporary mayólica with your students. Let them know that these are all mayólica pieces that have been created by contemporary talleres in Spain and Mexico. Discuss the strengths and origins of each piece. Determine which pieces are more historical or contemporary in nature. Which pieces are the students more attracted to?
4. The students' job is to design a signature line of ceramic ware. The line should consist of a series of vessels or functional objects which have a consistent shape and are decorated (or not decorated) with a specific set of design motifs, patterns and/or colors.

Procedure
1. Have the students work alone or in their groups. First they need to determine what it is that they will be making. Their ware can be historic, from a particular tradition or be something new. Then they can determine how it will be embellished. At some point they will also determine the name of their taller.
2. Students draw the forms their ceramic line will take. They should note on the drawing the size of the objects.
3. Students discuss different ways to decorate the pieces. They can practice sketching and painting different motifs, patterns and ideas.
4. Students copy the first drawings onto another paper, ideally watercolor color paper or a heavier drawing paper which is absorbent. Then they add the decorative forms to the drawings. Indicate the name of the taller and the participants.

Evaluation
Each taller selects a representative to present their line to the class. Display all of the new ceramic lines and discuss the merits of each in terms of style, design and function.

Make samples of the ceramic ware by using regular clay and firing and glazing it at school or a local pottery studio, or use self-hardening clay and acrylic paint to create the forms. Display the pieces and have the students discuss how feasible producing their line would be.

Extensions and Connections
Have students interview a local potter, a person who works in a ceramics warehouse, a ceramics supply store, or in a gallery that shows ceramics. Have them write a series of questions about the practice of making ceramics or working in the field of ceramics. They can report back to the class and discuss their ideas about what working in this field would be like. (Social Studies)

Have students write about a ceramic vessel from the perspective of the clay itself. Have them describe what it feels like to be collected from the ground, thrown on a wheel, baked in a kiln, decorated and fired again. They can continue their description to include how it feels to be used or just stored on the shelf. (Creative Writing)

Students can explore the world of retail by identifying local businesses that retail ceramics. Students can make a survey of what types of ceramics are available in their community and which sector of the community is most likely to purchase them. (Social Studies)

Making a Mayolica Masterpiece

Objectives
1. Students will understand that artists use mayólica ceramics to express their artistic mastery (historical and cultural understanding).
2. Students will observe the formal techniques that ceramics artists use to create masterpieces (perceiving, analyzing and responding).
3. Students will create designs for and/or an actual ceramic object which exemplify their highest creative ideals (creating and performing).

Materials
This is another project which can be completed with pencil and paper, or with clay, kiln and glazes.

Drawing paper, pencils, erasers, watercolor, brushes, containers for water, newspaper, or colored pencils; clay, potter's wheel, clay tools, kiln, underglazes, glaze, etc.

Motivation
1. Students will conceptualize a one of a kind ceramic object that is a vessel, a functional object, or decorative piece. It can be inspired by a historical piece or be contemporary in design. They can express themselves in an abstract or a narrative form. Their piece may be diminutive, over-sized, or anything in between.
2. View distinctive ceramic pieces. Discuss the outstanding features of the piecess.
3. Students should attempt to create a ceramic object or a design for a ceramic piece which is exceptional in some way, something really unique and unusual.

Procedure
1. Students draw their ideas for their ceramic forms on paper. (Some students may want to work in pairs or small groups.)
2. Post the drawings for review. Have students discuss the forms and talk about what they like in their peers' work.
3. Students work on the drawings more, refining their ideas and forms.
4. If the students are working in ceramics studio they can make their pieces out of clay. Students who are just working on paper can add the surface decoration to their pieces with watercolor or colored pencil.

Evaluation
Display the finished pieces with labels explaining the ideas behind each piece and, when applicable, the ceramic inspiration for each piece.

Have students write labels for each piece from the point of view of the piece itself. The piece can explain its identity, history and function.

Extensions and Connections

Have students research different ceramic forms in history, for example, the Grecian urn, or ceramic fountains and mosaics. They can report to the rest of the class on their findings regarding history and contemporary use. (Art History)

Students can study remarkable architectural sites which utilize mayólica and other ceramics, for example, La Alhambra in Granada, Spain, Acatapec in Puebla, Mexico, or Antonio Gaudi's buildings and parks in Barcelona, Spain. (Art History)

Students can study the way that different cultures have developed ceramic production and use, for example, Japanese and Native American cultures. Have them compare and contrast cultures and ceramic traditions. (Art and Social Studies)

Have students research concepts of beauty over time. They can look at works of art that are considered to be masterpieces and analyze their content, form and technique. How do these works reflect the times in which they were created? What do students think about beauty now? What are the most beautiful things in their lives? Where do they see the most beautiful works of art? (Art History)

Mayolica in Daily Life

Both the forms of mayólica vessels and the imagery depicted on the pieces offer insight into everyday life in Spain and Mexico. All of the ceramics reveal something about the times in which they were created: the dress of the different eras and classes; the types of herbs that were used medicinally and sold in local apothecary shops; the beverages and food consumed in religious institutions, palaces, and homes. Occasionally a new vessel form indicates a new social custom or practice, such as the *mancerina*, designed specifically for serving chocolate, a drink introduced to Spanish colonists by the Aztecs. Over the years, mayólica potters have created a valuable record of costume, custom and diet.

Chocolate Saucer / *Mancerina*
1748-1798, Alcora, Spain
Museum of Spanish Colonial Art, Collection of the Spanish Colonial Arts Society, Inc., Santa Fe

Italian potters living in Spain in the 16th century introduced the concept of tiles as a canvas. Some of the earliest depictions of daily life were the guild tiles, or *oficios*, depicting people in various occupations. These were often created as advertisements for businesses, and were comprehensible to a largely illiterate population.

Trade Tile / *Azulejo de Oficios*
1750-1800 Barcelona, Spain
Museo de Cerámica, Barcelona

Plates and pots were also vehicles for depicting everyday activities and clothing, sometimes expressing political statements and satire. Seventeenth and 18th century examples from Mexico were dominated by motifs and characters derived from Chinese porcelains, but in the 19th century, Spanish and French-style genre scenes became more prevalent. In early 19th century Spain, some vessels bore the image of Ferdinand VII showing their support of royal troops fighting the Napoleonic invasions in Spain.

Mayólica vessels were made to serve almost every function in the Spanish and Mexican household. Inkwells, flower pots, chamber pots, and barber bowls were among the items that were formed on the potter's wheel. Many of these pieces were based on metal or wooden prototypes. Mayólica proved to be less expensive that metal, more durable than wood, and more colorful than either. The status associated with mayólica is evident in its inclusion in many portraits and still lifes in the colonial period, indicating that it was an important possession. The range of vessel forms provides a glimpse of the many activities that made up daily life in Spain and Mexico.

Chamber Pot / *Bacín*
1750-1800, Puebla, Mexico
Houghton Sawyer Collection, Gift of Mr. & Mrs. John F. Holstius
Museum of International Folk Art, Santa Fe

The typical Spanish apothecary jar derives its shape from the Muslim world. The apothecaries and hospitals established in Spain following the great plague of the 14th century were based on Arab pharmacies. The shape of the jars parallels the bamboo sections in which Arab pharmaceutics were shipped. Typically they were covered with a piece of cloth or parchment.

Apothecary Jar / *Bote de farmacia*
1750-1800, Talavera de la Reina or Puente del Arzobispo, Spain
International Folk Art Foundation, Santa Fe

Apothecary jars in Spain often had the name of the contents permanently marked on the vessel. Those in Mexico may have had a label pasted on the jar or covering. Herbs, medicinal plants, as well as spices, candied fruits, and scented honeys were typically stored in these jars, which were narrow at the waist for easy removal from pharmacy shelves. Pharmacies were often attached to royal courts, monastic houses and hospitals; therefore, the jars would also bear the insignia of a particular institution.

In Spain the production of mayólica was largely supported by various religious institutions. In the 1500s, Phillip II commissioned over 9000 tiles for the monastery of his palace, the Escorial. Tableware was also commissioned for the Escorial bearing the emblem of the Hieronymites, the order of the monks who ran the monastery. Religious patronage continued in Mexico, where hundreds of mayólica vessels were produced to handle the food storage and dining of the many cloistered orders of nuns and friars, as well as the secular clergy. Religious establishments rented shops and spaces to potters who paid part of their rent with goods produced that would either be used by the convent or monastery, or sold to raise funds for the religious order.

Apothecary Jar / *Bote de farmacia* with the emblem of the Carmelite Order
1700-1800, Sevilla, Spain
International Folk Art Foundation, Santa Fe

The decoration of the 18th century Spanish kitchen revealed as much about daily life as the vessels and utensils within it. During this era, known as the Age of Enlightenment, the French court at Versailles was the object of emulation by all of the courts of Europe. Felipe V, the first Spanish Bourbon king, and his court, embraced French Rococco fashion and social customs.

One characteristic of this period was an emphasis on decoration, breaking away from the somber colors and spaces of the baroque and filling rooms and walls with light and air. In many areas of Spain, tilework replaced earlier, heavy *guadamaciles* (leather hangings). Once again tile began to invade all parts of a building – as it had in Islamic Spain – only now the decoration was not geometric and floral, but figurative. Entire walls of palaces and grand homes were covered in pictorial tilework, illustrating scenes of domestic and courtly life – themes that were also popularized in the French and Spanish paintings of Watteau, Boucher and Goya. Interior walls depicted domestic scenes, and most popular were those of the kitchen.

Catalan Kitchen / *Cocina Catalana*
Alejandro Jarandilla, Cerámica Camaró
2002 Capellades, Spain
International Folk Art Foundation,
Santa Fe

In colonial Mexico, the latest improvements in kitchen design, technology, and cuisine often took place in religious institutions. As early as 1524, friars were supervising Indian laborers in the construction of mission establishments that included churches, monasteries, schools for Indian converts, and kitchens. These self-sufficient kitchen complexes included a vegetable garden, orchard, cistern, aqueduct, cold room, kitchen, bakery and refectory.

Pitcher / *Cántaro*
1850-1900
Puebla, Mexico
International Folk Art Foundation, Santa Fe

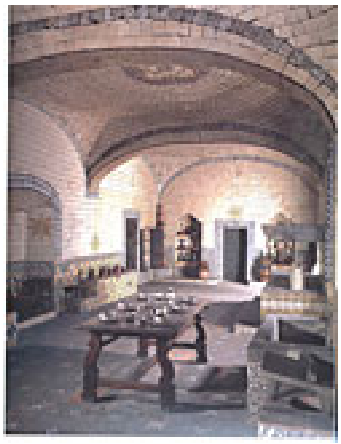
Staffed by monks and Indian servants, Mexican mission kitchens undoubtedly made use of a mixture of utensils from both cultures, such as the Mexican grinding stone (*metate*) as well as the European mortar and pestle. Mayólica imported from Spain was probably used alongside Mexican mayólica and, by the late sixteenth century, some Chinese porcelain. These vessels would have been used

primarily for serving, decoration, and storage. Food was cooked and prepared in unglazed earthenware pots that continued to be made in the indigenous ceramic tradition.

Mortar / *Mortero*
1700-1800, Teruel, Spain
International Folk Art Foundation, Santa Fe

By the 17th century numerous convents had been founded in Mexico and Puebla. Known for their culinary prowess, they are often credited with inventing the various hybrid recipes of the colonial period still used today in the distinctive cuisine of Mexico. *Mole poblano*, the sauce made from chocolate, peanuts, chile (all products of the Americas), sugar (African/European), and cinnamon (Asian) and used on turkey (Americas) or chicken (European) is one such dish.

By the 18th century most convents had developed large communal kitchens. The raised cooking range set against the wall, a technological innovation of the 17th century, was incorporated into these large kitchens, allowing for better control and varied regulation of heat for cooking. In many convents, particularly in Puebla, these ranges as well as the kitchen walls and countertops were covered with mayólica tiles. The fashion in Spain of depicting household members and implements in the kitchen tilework never caught on in Mexico, which instead retained the Islamic flair for geometric patterning.



Kitchen of the Monastery of St. Rose / *Cocina del Convento de Santa Rosa*
Founded 1708 Puebla, Mexico
Photo by Juan Carlos Varillas Contreras

Place settings as we know them today were not formalized until the 19th century. The emphasis before then was on displaying the breadth of objects that one had been able to acquire. Mayólica was used for dining, along with other ceramics from Spain, France, England, or China. These were combined with items of silver that might have been handed down in the family, and pewter, an inexpensive metal that was locally manufactured.

Salt cellars were often a prominent part of the table setting. In medieval Spain, salt cellars were the first vessels to be set upon the table and the last to be put away. This ritual was based on Christian liturgy, representing the celebration of the Eucharist with the salt cellar as a symbol of the union between the dinner guests and God. The prevalence of salt cellars and spice holders also illustrates the importance of spices to the cuisine, both as a flavor enhancer and to hide the taste of rancid meats before the introduction of refrigeration.

Salt holder / *Salero*
Puebla, Mexico
Museum of International Folk Art, Santa Fe

Chocolate

Oh Bevanda delicata!
Oh tremenda cioccolata!

Oh delicate Beverage!
Oh awesome chocolate!
Marcello Malaspina Italy, 1687-1757

Among the exotic items that the Mayans and Aztecs introduced to the Spanish was chocolate. The bean of the cacao plant had long been used in the Americas to make a beverage that was typically served unheated, unsweetened, and sometimes spiced with chile. The native Mexican Indians believed it to have spiritual qualities, and the valuable beans were also used as money.

Aristocratic Europeans initially rejected this bitter drink. In time, however, by heating the chocolate and mixing it with cinnamon, vanilla, and sugar cane, they created a beverage that was more than acceptable. By the mid-1600s chocolate became the rage throughout Europe and it was thought to have medicinal properties. In the 17th century the Catholic Church attempted unsuccessfully to ban chocolate because of its reputation as an aphrodisiac. Its consumption conferred status on those who could afford to purchase, prepare and drink it properly.

Drinking chocolate properly meant having the right equipment for storing, grinding, heating and serving the beverage. *Chocolateras* in Mexico were derived from pre-Columbian cooking pots and were used solely to heat chocolate. *Molinillos* were developed to froth it. *Tibores*, ceramic storage jars similar to the Chinese ginger jars, with heavy iron lids, were used to keep the cacao beans under lock and key. A cup and saucer combination, called a *mancerina*, was invented by Peruvian metal smiths for serving the beverage. Tile panels depict people of the upper class imbibing chocolate and still life paintings feature chocolate vessels.

Maiden Carrying a Chocolate Saucer / *Una doncella llevando una mancerina*
1700-1800 Alcora, spain
Museo de Cerámica, Barcelona

Questions for discussion:

1. What do you have at home that is made out of ceramics?
2. How are they decorated? What stylistic imagery do you see represented?
3. How is your kitchen decorated?
4. Do you use ceramics in your kitchen? If so, where are they from?
5. What other foods besides chocolate came from the Americas?
6. What recipes are favorites in your household? Who makes them and where did they come from?
7. What are your favorite foods and where do they come from? Where do you come from? What is your relationship to the cultures that represents your favorite food?

Function is Fun

Objectives

1. Students will understand how specific mayólica objects have been created and used over time (historical and cultural understanding).
2. Students will comprehend the way that certain mayólica pieces have been designed in relation to their function and/or purpose (perceiving, analyzing and responding).
3. Students will learn how to make their own functional ceramic piece (creating and performing).

Materials

Self hardening clay, or sculpey for those who do not have access to a kiln, pieces of cardboard to work on, newspaper, plastic bags to drape over wet pieces, acrylic paints and brushes; regular clay, clay tools, containers for water, kiln and firing accessories, underglazes, brushes and glaze.

Motivation

1. Ask students what objects they use everyday, at home and at school, and , if they work, at their jobs. What are the objects made out of? What objects that they use everyday are made of clay?
2. Explain to the students that they will be designing their own functional objects out of clay. The objects can be things that are used to eat off of, serve or prepare food, vessels to drink out of or pour from, containers for tools or pens and pencils or anything else that they can think of that serves a purpose.
3. Look at pieces of functional ceramics. Discuss how the function of the piece is an integral part of the design.

Procedure

1. Give each student a piece of clay and cardboard to work on. (If your students are unfamiliar with clay construction, you may want to give them an entire session just to experiment with it.) Go over basic clay construction methods, such as the coil, slab and pinch pots techniques. Discuss the importance of using water, scoring and blending to join two pieces of clay together to insure that the clay piece stays intact during the drying and firing process.
    a. To make a coil, roll a piece of clay between your hands, or between your hands and the table to make a snake shape. Then curl the coil around itself to make the base of the form. Additional coils can be added to build up the walls of the form. Score the coils with a clay tool or a toothbrush and moisten with water to insure the piece stays together after it dries. You can blend the coils if you prefer a smooth texture.
    b. To make slab form use a rolling pin to make a clay pancake, or slap the clay between your hands. You can cut any shape out of the flattened clay to use for a plate, dish or platter form. Crumple up a piece of newspaper to use to shape the clay. Rest the clay on top until it dries.
    c. To make a pinch pot, roll a small lump of clay into a ball. Smooth out any creases or cracks. Hold the ball in the palm of one hand and insert the thumb

of your opposing hand directly into the middle of the ball. Push your thumb as for down as you would like the bottom of the vessel to be. Then turn the clay on its side and press your thumb against your second and third fingers, compressing the clay. Rotate the clay and continue pressing it until you have a vessel shape.

2. Show students how to make a foot and a handle for the pieces. To make a foot, turn the piece over so the bottom is up. Make a coil to form a circle at the base. Score the base, moisten with water and attach the coil. Blend the clay to secure it. To make a handle, form a coil and score the side of the vessel where it will be attached. Moisten it with water and attach the coil upside down. Then score where the bottom of the handle will be and moisten with water. Attach the coil and blend if desired.
3. Students can use clay tools to make designs, write messages or create textures on their pieces.
4. Have students form the clay into something that they could use everyday. If necessary, use newspaper to help support or mold the pieces.
5. Drape plastic over the pieces to let them dry slowly. (Unless using sculpey)
6. Let dry. Fire in kiln if possible. Cook sculpey in oven according to directions.
7. Paint self hardening clay when dry and sculpey when cooked with acrylic paints. Underglaze and glaze bisqued pieces.

Evaluation
Display finished works with labels indicating how the pieces will be used. Have a discussion of what types of objects were created and why.

Have students draw pictures of their functional objects in the context in which they have been designed to be used. Display the drawing and discuss if seeing the works in context changes how the objects are perceived.

Extensions and Connections
Have students design a place setting consisting of a large plate, a soup dish, a salad plate, a dessert dish, a cup and saucer. They can design serving platters to go with the dishes if they like. (Applied Arts)

Have students take photographs of their own families and their friends' families during mealtimes. They can make collages of the images and discuss the different types of settings and ways that people come together to share food. (Visual Art)

Have students think about how people in the future will view our culture today. Select objects for students to view and have them discuss how people might look at us 500 years from now. (Social Studies)

Search for clay on a field trip with your students. Clay deposits can often be found on or near riverbanks. To determine whether moist earth is clay or mud try rolling it into a snake. Then take the snake and make it into a circle. If the circular form holds, the earth is clay, if not, it is just mud. Take samples of earth and classify them according to the criteria that the students choose. (Earth Science)

Make the following mole and/or chocolate recipes with your students. Enjoy the foods and discuss whether the ingredients came from Europe or the Americas. Have students research the history of these recipes and discuss whether they were eaten daily or for special occasions.

Chicken with Mole Sauce

1 chicken cut into 8 serving pieces
2 onions, quartered
4 cloves garlic, peeled & halved
6 sprigs each of fresh thyme, oregano and parsley
12 chiles guajillos, cleaned
3 ripe tomatoes, peeled
1/4 cup sesame seeds
1 tablespoon dried oregano
1 whole clove
1/2 teaspoon ground allspice
1/4 cup oil
8 cloves garlic, peeled
1 – 2 inch piece cinnamon stick
1 plantain, peeled & chopped
1 ounce Mexican chocolate

Place the chicken in a stew pot and add half of the onions, peeled and halved garlic and herbs. Cover with water and bring to a boil. Cover, and simmer until tender, about 30 minutes.

Meanwhile, remove the stems from the chile peppers. Cut them in half lengthwise and remove the seeds. Toast the chiles briefly in a hot skillet; do not overtoast. Place chiles in a small bowl and cover with hot water; set aside.

Place the peeled tomatoes in a blender and pulse a few times. Toast the sesame seeds until just browned in the same skillet. Add to the tomatoes, along with the oregano, cloves and allspice. Blend until smooth. Add oil to the skillet and fry the onion pieces for about 5 minutes. Add the garlic, cloves and cinnamon stick and fry for 2 to 3 minutes. Remove with a slotted spoon and transfer to a blender jar. Fry the plantain for a few minutes, then transfer to the blender, along with the chiles and water. Blend until smooth. Strain the sauce and return to the skillet. Add to the chocolate and season with salt.

Add 2 cups of the chicken broth to the sauce and the stewed chicken pieces. Cook for 20 to 25 minutes, uncovered. Mole sauce should be fairly thick.

Spanish Hot Chocolate

10 – 12 oz. semi-sweet chocolate, grated
2 1/4 cups water
1 teaspoon cornstarch (corn flour), dissolved in a little water

Heat the grated chocolate with the water in a saucepan. Stir to mix thoroughly. When it comes to a boil, add the dissolved cornstarch. Bring back to a boil 3 times, whisking vigorously and removing from the heat each time it starts to bubble to prevent the mixture from boiling over. Ladle into cups from a suitable height to make it nice and frothy.
(Social Studies)

Students can research the slow food movement. They can make a presentation to their class with their findings and the class can discuss the pros and cons of fast and slow foods. (Social Studies)

Cerámica y Cultura: The Story of Spanish and Mexican Mayólica
Teacher Resource Guide for grades K – 12

Designing Tiles

Objectives
1. Students will understand the many ways that ceramic tiles have been used in Spain, Mexico and their own community to decorate interior and exterior architectural spaces (historical and cultural understanding).
2. Students will recognize different way that ceramic tiles are used for utility and decoration (perceiving, analyzing and responding).
3. Students will make their own ceramic tiles or plan a ceramic tile mural (creating and performing).

Materials
Drawing paper, pencils, erasers, colored pencils, clay, clay tools, or bisqued tiles, underglazes, brushes, containers for water, glaze, kiln and firing accessories.

Motivation
1. Explain that students will have an opportunity to design their own tiles. The tiles can be used individually, as a trivet, for decoration, as part of a tile mural or as a repetitive geometric pattern (tiles that have design motifs that connect on one edge can be particularly compelling to design and play with.)
2. Have students look at the ways that tiles are used in school, at home and in their immediate surroundings. Discuss the ways that they see tiles used. What are their favorite designs and patterns?
3. Look at images of tiles (or actual tiles) that as decorated with different types of designs. How were these tiles used? How were they created?
4. Students can create individual tiles that are textured or have a design, motif or scene painted on them or they can create a tile panel that, when assembled, makes a scene or a design.

Procedure
1. Students take the drawing paper and divide it into a grid of 4” x 4” or 6” x 6” inch squares.
2. Students sketch their ideas for a scene, figurative piece or a geometric design. They can correct and refine their drawings.
3. Add color to the drawings with colored pencil.
4. If possible, paint the design ideas on bisqued tiles with underglazes. Glaze and fire. If you have access to a clay studio, have students make their own tiles using presses, slab rollers, are rolling them out with rolling pins. Bisque fire the tiles and then glaze and fire them.
5. Assemble the tile panels.

Evaluation

Cut the drawings up to make individual tiles. Put the paper tile pieces in a box (one box per original drawing. Have students exchange tile puzzle boxes and reassemble each others work. Do some pieces have multiple solutions? Do other pieces have only one correct answer?

Have students create two tiles, one that is representational and one that is geometric. Have them assemble them as a group. First make two group pieces, one that is purely representational and one that is purely geometric. Then mix up the styles. Mix them up again. Discuss the results.

Extensions and Connections

Have students survey the use of tiles at school, in their homes and communities. They may want to use the sides of crayons and paper to do rubbings to document their findings. They can present their findings to the class, discussing where tile is usually found and the most popular patterns that they found. (Visual Art)

Students can find examples of the many ways that tiles are used inside and outside of buildings, including the use of broken tiles and discarded ceramics by "outsider" and contemporary artists. Have them collect images of tiled surfaces from magazines and books and look at hem as small groups. Then have the students conceptualize sites to tile and draw their ideas. (Visual Art)

Key Vocabulary

albarelo	apothecary jar
alfarero	potter
alicatados	tile panels (mosaics)
aperlado	light blue glaze used in Puebla, named after a local candy of the same hue
azulejo	tile (derived from Arabic "al-zulai_" which means brick)
bandeja	platter
bacín	chamberpot
bote	apothecary jar
cántaro	pitcher
chocolatera	chocolate pot
cofradía	religious brotherhood
cuenco	bowl
especiero	spice holder
gremio	guild; an organization of professionals, in this case, potters
horror vacii	fear of open spaces, intensive, highly decorated surfaces with intricate designs
jícara	chocolate cup
lebrillo	basin
locero	mayólica potter
loza, loza blanca	term used for *mayólica* in Mexico and Spain
maestro	master potter
mayólica	tin-glazed earthenware
mancerina	stand for a chocolate cup
mole	sauce invented in Puebla, Mexico made of choclate, spices, chiles, peanuts and sugar, served over chicken or turkey
molinillo	chocolate stirrer
mudéjar	artistic style produced by Muslims in Christian-occupied territory for Christian clients; also hispano-moresque
Muslim	practitioner of Islam
pintor	painter
polychrome	many colored
quetzal	national bird of Mexico
reflejo metálico	lusterware
taller	workshop
tibor	storage jar
tintero	inkwell

Resources

Adult Books

"Azulejos" Artes de Mexico. Revista Libro Numero 24, 2nd edition 1999.
"La Talavera de Puebla" Artes de Mexico. Revista Numero 3.
"Los Edpacios de la Cocina Mexicana" Artes de Mexico. Revista Libro Numero 36, 1996.

Akar, Azade. Authentic Turkish Designs. New York, NY: Dover Publications, Inc., 1992.

Coe, Sophie D. & Michael D. The True History of Chocolate. London, Thames & Hudson, 1996.

Cooper, Emmanuel. Ten Thousand Years of Pottery. Philadelphia, PA: University of Pennsylvania Press, 4th edition, 2000.

Dowlatshahi, Ali. Persian Designs and Motifs for Artists and Craftspeople. New York, NY: Dover Publications, Inc., 1979.

Freestone, Jean & David Gaimester eds. Pottery in the Making, Ceramic Traditions. United Kingdom: British Museum Press in conjunction with Smithsonian Institution Press in Washington, D.C., 1997.

Frothingham, Alice Wilson. Lusterware of Spain. New York, NY: The Hispanic Society of America, 1951.

Gavin, Robin Farwell, Donna Pierce and Alfonso Pleguezuelo, eds. Cerámica y Cultura: The Story of Spanish and Mexican Mayólica. Albuquerque, NM: University of New Mexico Press, 2003.

Hess, Catherine. Italian Ceramics, Catalogue of the J. Paul Getty Museum Collection. Los Angeles, CA: The J. Paul Getty Museum, 2002.

Hilliard, Elizabeth. The Tile Book, Decorating with Fired Earth. San Francisco, CA: Chronicle Books, 1999.

Karmason, Marilyn G. & Joan B. Stacke. Majolica, A Complete History and Illustrated Survey. NY: Harry N. Abrams, 2002.

Kuwayama, George. Chinese Ceramics in Colonial Mexico. Los Angeles, CA: Museum Associates, LA County Museum of Art, 1997.

van Lemmen, Hans. Delftware Tiles. Woodstock, NY: The Overlook Press, 1997.

Lister, Florence C. Pot Luck., Adventures in Archeology. Albuquerque, NM: University of New Mexico Press, 1997.

Lister, Florence C. & Robert H. Andalusian Ceramics in Spain and New Spain, A Cultural Register from the 3rd Century B.C. to 1700. Tuscon, AZ: University of Arizona, 1987.

Maiolica Olé. Santa Fe, NM: Museum of New Mexico Press, 2001.

16th Century Maiolica Pottery in the Valley of Mexico. Tuscon, AZ: University of Arizona Press, The Anthropological Papers of Arizona, Number 39, 1982.

Lopez, Ruth. Chocolate, The Nature of Indulgence. New York: Harry N. Abrams in association with The Field Museum, Chicago, 2002.

McQuade, Margaret Connors. Talavera Poblana Four Centuries of a Mexican Tradition. New York, NY: The Americas Society, 1999.

Minchilli, Elizabeth Helman. Deruta, A Tradition of Italian Ceramics. San Francisco, CA: Chronicle Books, 1998.

Oettinger, Marion Jr., Ed. Folk Art of Spain and the Americas. New Yrok: San Antonio Museum of Art in conjunction with Abbeville Press, 1997.

Osterman, Matthias. The New Maiolica. Contemporary Approaches to Colour and Techniques. Philadelphia, PA: University of Pennsylvania Press, 1999.

Presilla, Maricel E. The New Taste of Chocolate, A Cultural and Natural History of Cacao with Recipes. Berkeley, CA: Ten Speed Press, 2001.

Ray, Anthony. Spanish Pottery. London: V & A Publications, 2000.

Simakoff, N. Islamic Designs in Color. New York, NY: Dover Publications, Inc., 1993.

Takahishi, Masako. Mexican Tiles. San Francisco, CA: Chronicle Books, 2000.

Watson, Wendy M. Italian Renaissance Ceramics. Philadelphia, PA: Philadelphia Museum of Art, 2001.

Wilson, Eva. Islamic Designs for Artists and Craftspeople. New York, NY: Dover Publications, Inc., 1988.

Curricula

Godlas, Sylvia. Doorways to Islamic Art, A Curriculum for Interdisciplinary Studies. Berkeley, CA: AWAIR (Arab World and Islamic Resources and School Services), 1996.

Shabbas, Audrey. A Medieval Banquet in the Alhambra Palace. Berkeley, CA: AWAIR, 1991.

Stacey, Jane and Lynn Walters. Cooking with Kids, Integrated Curriculum Guides, Grades K-1, 2-3 & 4-6. Santa Fe, NM: Lynn Walters and Jane Stacey, Cooking with Kids, 2002.

Children's Books

Andrews-Corbel, Nancy. The Pot that Juan Built. New York, NY: Lee & Low, 2002.

Baylor, Byrd. When Clay Sings. New York, NY: Aladdin Paperbacks, 1972.

Girón, Nicole. El Barro. Mexico, D.F.: Editorial Patria, 1983.

Park, Linda Sue. A Single Shard. New York: Random House, 2001.

Swentzell, Rina. Children of Clay. Minneapolis, MN: Lerner Publications, 1992.

Videos

Fuentes, Carlos. The Buried Mirror. Public Media Video. 1991.

Appendix

Timeline: Cerámica y Cultura

Spain / *Mexico*

711 Umayyad (Arab) invasion of Spain.

722 Beginning of Christian War of Reconquest

9th century Discovery of tin-lead (mayólica) glaze in Mesopotamia

9th century Lusterware produced in Tunisia

10th century Mayólica first introduced to Spain by Islamic artists

11th century Earliest production of Spanish lusterware in Murcia (Andalusia)

1094 El Cid re-conquers Valencia for Christian army

13th century Lusterware production begins in Málaga (Andalusia)

1238 Nasrid Kingdom of Granada founded (1238-1492)

1300s Construction of the Alhambra Palace

1478 Papal Bull institutes the Court of the Inquisition

1492 Columbus's voyage to the Americas. Expulsion of Jews from Spain. Fall of Granada and unification of Spain under the Catholic monarchs.

1498 Portuguese open up water route to Far East around Cape of Good Hope

1504 Italian artist, Francisco Niculoso, introduces Renaissance tilework to Spain

1515 Earliest document mentioning potters in Talavera de la Reina

1517 Carlos I became first Hapsburg King of Spain

1521 Cortés conquers Aztec capital at Tenochtítlan

1531 Puebla de los Angeles founded

1540 First known recorded date of a potter in Mexico City

1565 Route of the Manila Galleons established between Acapulco, Mexico, and Manila, Philppines (to 1815)

1573 First known recorded date of mayólica production in Puebla

1585 First documented shipment of cacao beans to Spain from Americas

1601 Sumptuary laws prohibiting the manufacture of gold and silver tableware

1609-10 Remaining Muslims expelled from Spain leaving many ceramic workshops vacant

1653 Potters' guild instituted in Puebla

1657 Potters' guild formalized in Talavera de la Reina

1677 Potters' ordinances enacted in Mexico City

1703 Felipe V becomes first Spanish Bourbon king

1710 European porcelain first produced in Meissen, Germany

1727 Royal ceramics and Porcelain Factory founded in Alcora

1765-1789 Series of declarations allows free trade between Americas and other European countries

1781 San Carlos Academy founded, introduces Neoclassical style to Mexico

1808 Napolean invades Spain

1810-1821 Mexico's War of Independence. Emergence of ceramic centers at Guanajuato, Dolores Hidalgo, Sayula, and Aguascalientes.

1812 Abolition of guilds by the Cortes (parliament) of Cádiz

1814 Spain wins independence from Napolean

1817 Real Fábrica de Moncloa uses modern industrial methods of earthenware production

1849 El Carmen factory in Talavera de la Reina founded

1900-1910 Mexican Revolution. Rejection of Spanish artistic tradition in favor of an indigenous aesthetic

1932 Pedro de la Cal founds Santa Catalina Cerámica Regional, Puente del Arzobispo

1937 La Trinidad workshop in Puebla founded

1960 Alfarería Tradicional founded by Gorky González in Guanajuato

1980s Froilans found Fábrica Taller Cerámica Artística J.A. Froilan in Talavera de la Reina

1992 Talavera de la Reyna workshop founded by Angélica Moreno in Cholula

Formulas for mayólica glaze and stains, instructions for firing:
(Provided by Nausika Richardson, a mayólica artist living in Dixon, NM)

Mayólica glaze cone 03	
Ferro frit 3124	4000
Epk kaolin	500
Tennesee ball clay	500
Silica	600
Zircopax	700

Mix above proportions with 5.5 quarts of water, put through 80 mesh sieve

Some points to note when glazing with mayólica glaze:
- The larger the piece the thinner the glaze should be. Larger and thinker pieces absorb more water.
- Bisque to cone 06. The more porous the ware, the more water it will absorb. When glazing a highly vitrified piece, the glaze needs to be thickened.
- The clay surface should be as smooth as possible, otherwise pitting will occur.

Firing in an evenly loaded kiln (Skutt 1027-24, 27" x 24")
- Start on low with lid propped up to 1.5 inches and top peephole open.
- Turn middle knob to med. at 400 degrees farenheit.
- Turn all knobs to med. at 500
- Lower lid down at 700, after all paraffin has burned off.
- Turn middle to high at 1000
- Turn all to high at 1000
- Turn all to high at 1200
- Pyrometer should read 1980 when cone 03 goes down
- Put in to peep hole plug
- Total firing time is approximately 8 – 10 hours depending on how densely the kiln is loaded.

Slips for painting on mayólica glaze

Red	
Mason stain 6003 (crimson)	4 parts
Frit 3124	6 parts
Ball clay	1 part

Turquoise	
Mason stain 6364 (turquoise)	4 parts
Frit 3124	6 parts
Ball clay	1 part

Yellow	
Mason stain 6407 (marigold)	3 parts

Frit 3124	6 parts
Blue	
Cobalt ox	.5 parts
Frit 3124	10 parts
Ball clay	2 parts
Copper green	
Copper carb	10 parts
Ball clay	1 part
Black	
Cobalt ox	1 part
Chrome ox	1 part
Manganese diox.	2 parts
Frit 3124	3 parts
Iron ox	1 part
Purple	
Red slip	2/3 part
Cobalt slip	1/3 part
Tan orange	
Mason stain 6121 (Saturn orange)	4 parts
Frit 3124	6 parts
Ball clay	1 part
(for peach add 5% crimson)	