

# All Roads Lead to Timbuktu

## *by car, camel, waterway, ink, and air*

**Lesson plan: Metal Repoussé Appliqués, Plaster molds, Press Mold Jewelry & Ornaments, and Slip-Cast Jewelry and Ornaments with other Timbuktu Inspirations**

Presenter: Dr. Ann H. Fuerst, Ph. D.

Grade Level: Seventh Grade



Fig. 1: Quinn 7<sup>th</sup> grade student who helped create projects Fig. 2: On The road in West Africa: Guide, car, and driver to desert; Fig 3: Guide, car, and desert driver, Fig. 4: Ann Fuerst on desert road. Fig. 5: camels in Timbuktu dessert at rest carrying round water bag:



Fig. 6: Walking down sandy streets of Timbuktu toward a mosque. Fig. 7: Children and adults in Timbuktu street of sand passing a decorated door. Fig. 8: Writer at sunset in Timbuktu desert; Fig. 9: Sandy street outside Sankore Mosque with decorated door.



Fig. 10: Sankore mosque. Fig. 11: Sankore Mosque with decorated door. Fig. 12: Three of five doors of Sidi Yahiya University, Timbuktu. These doors in the lesson are referred to as doors 3 (left); 4 (center); and 5 (right).

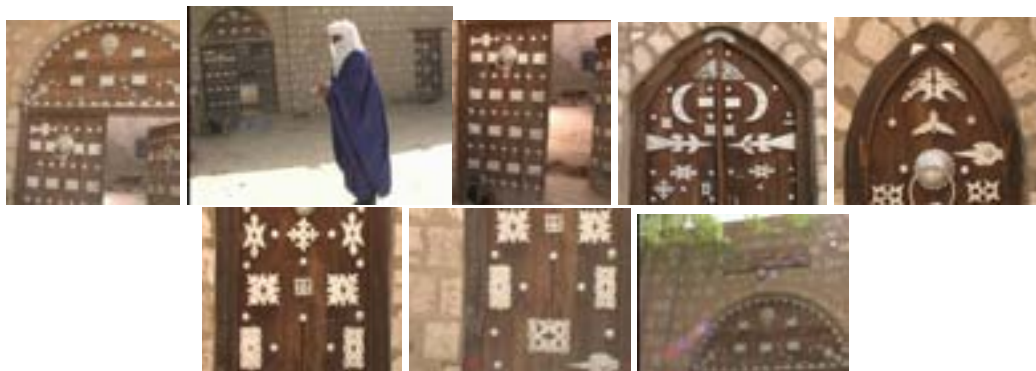


Fig. 13: One of five doors of Sidi Yahiya University courtyard in Timbuktu. These doors are referred to as doors 1 (side); Fig. 14: Doors 1 and 2 at side with guide; Fig.15: Lower side door #1 and a look into inner courtyard; Fig. 15: 4 (upper center door); Fig. 16: upper section of door 5; Fig. 17: mid-section door 5; Fig.18:lower door 5; Fig. 19: Tympanum of door 1;



Fig.20: Decorated windows at Timbuktu museum; Fig. 21 to Fig. 26: Manuscripts housed in Timbuktu museums from the “Ink Road”; Fig.23-24: Astronomy Manuscript; Fig. 25-26: Pharmacy manuscript in main museum



Fig. 27-32: Travel by camel if you are on the salt route. Large slabs of salt are collected from the caravans in Timbuktu and shipped down river to Mopti. From there, trucks ship to other parts of Africa.



Fig. 33-37: Another route to Timbuktu is by sailing on the waterway Niger River from August to December when water levels are high.. Along the way you may see sail boats, travel in a *Pinese* and dock at interesting villages, mingle with other passengers on the *Pinese*, watch cattle cross the river, or use your satellite phone on a *Pirogue* or canoe.

## Background Information:

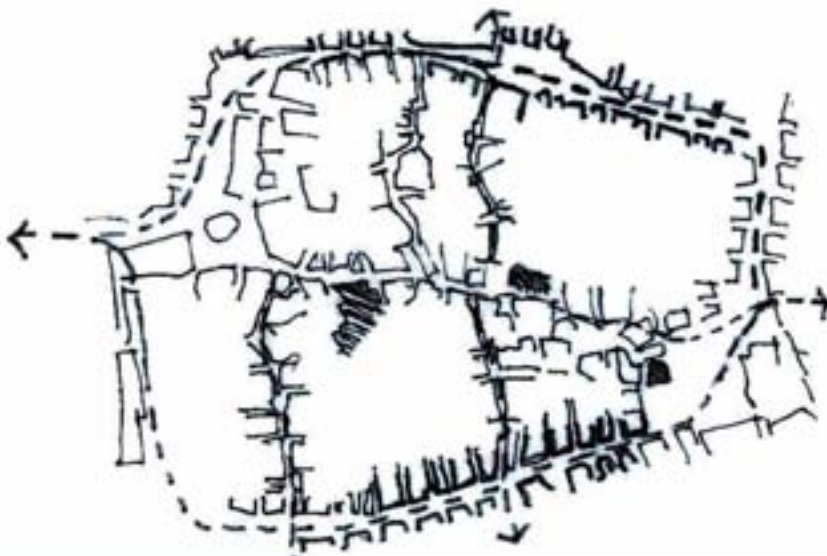


Fig.38: Timbuktu sketch. The whole fabric of the city in a circumscribed area of approximately 49 ha contains neighborhoods Sankore North East Djingareyber in the Southwest, Sareikaina south-east and Badjindé in the East;

## The Roads

The idea that all roads lead to Timbuktu is easy to imagine when one wants to contemplate the far-away, the mysterious, the exotic and unknown. In the drawing of the town above (Fig, 38) one can see that although all roads lead to Timbuktu, they skirt around the Historic property and essentially only pedestrians walk in the area.

Even though travelers across the desert, like this writer, may not have had roads to travel upon when traveling to Timbuktu—because Timbuktu is the center of the Sahel—it was the main hub in the salt trade, and it was the most remote (now there is an international airport and maybe a paved highway). The desert city centuries ago was highly regarded in terms of scholarly attainments in Africa. Most recently it was in peril because of desert sands and floods. Archaeologists, Geographers, Scholars have traveled the many roads to Timbuktu for many different reasons. These roads include 1. crossing the desert sand by car (Fig. 2-4 ); 2. crossing the desert by camel by salt and gold trade routes (Fig.5, 27-32); sailing up the main waterway, the Niger river by Pinasse (Fig. 33-37 ); 4. the “ink road” — a way to follow the transportation of scholarly works on manuscript (Fig. 20-26 ) and 5. by air on Air Mali International or in a souped up dune buggy.

Construction on highways may have already produced a paved road for automobile travel. Some members of the Tuareg still use the traditional trade routes, often traveling 1,500 miles and six months out of every year by camel across the Sahara trading in salt carried from the desert interior to communities on the desert edges. Above pictures show the huge slabs of salt —probably brought by camel caravan to Timbuktu and shipped on the river Niger—now after leaving the Timbuktu caravans, hand carried from the river to a truck going to the capital of Mali. The construction of a Dam on the river that may occur in the future may change the waterway experience. Also, in the future, the ink road will have a new library in Timbuktu and Neil Laughton may have his new souped up sand buggy to drive and fly from London to Timbuktu.<sup>1</sup>

## The Lesson

A lesson in metals is very appropriate for a study of the arts of Timbuktu. Gold was used in calligraphy illumination of some of the most famous manuscripts of the “ink road”. Today some are housed in the old Ahmed Baba Centre (Fig. 20). However, work has already begun on the new library next to the Sankore mosque, which will house more manuscripts than ever before.<sup>2</sup> Also, street artisans weave and dye strands of straw to look like spun threads of gold. This writer watched attentively as metal smiths fashioned pieces of silver in the market, then dipped them in solutions to give them a golden finish.

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<sup>1</sup> accessed August 11, 2009. <http://www.thisfrenchlife.com/thisfrenchlife/2009/01/sky-car-heads-to-france-en-route-to-timbuktu.html>

<sup>2</sup> Andre Spies [http://web.uct.ac.za/depts/religion/documents/ARISA/2005\\_spies.pdf](http://web.uct.ac.za/depts/religion/documents/ARISA/2005_spies.pdf)



Timbuktu metalsmiths place jewelry in a solution to turn it into “gold”.

But the “silver” pieces that caught her attention the most, were the decorations on the doors of Timbuktu’s most important structures (Fig. 11-19).

Desert craftsmen bring attention to architectural elements made of precious imported wood from Yemen with elaborate designs in metal. In this lesson wonderful discoveries are made about metal appliqué on doors, windows, and gates in Timbuktu and her sister city Djenné—also in the Sahel.

The most impressive display of decorated doors in Timbuktu—five of them assembled in one courtyard—can be seen in a small courtyard of the 14<sup>th</sup> century Sidi Yahya University. Three single doors and two sets of double doors cover the five entrances. Each door has a number of ‘silver’ fittings carefully spaced at regular intervals. The patterns and activities in the first part of this lesson are based on these designs: 1. Repoussé with metal foil; 2. Press mold art with an oven-baked-hardening material and clay; and 3. clay-slip cast art. The second assignment involves research into the origin of these metal designs. Could it be that these designs were fashioned after carpets and textiles transported by camel across the desert?



**Content Standards:**

## **Grade Seven**

Visual and Performing Arts: Visual Arts Content Standards.

### **1.0 ARTISTIC PERCEPTION**

Processing, Analyzing, and Responding to Sensory Information Through the Language and Skills Unique to the Visual Arts

Students perceive and respond to works of art, objects in nature, events, and the environment. They also use the vocabulary of the visual arts to express their observations.

1.2 Identify and describe scale (proportion) as applied to two-dimensional and three-dimensional works of art.

## 2.0 CREATIVE EXPRESSION

Creating, Performing, and Participating in the Visual Arts

Students apply artistic processes and skills, using a variety of media to communicate meaning and intent in original works of art.

Skills, Processes, Materials, and Tools

2.1 Develop increasing skill in the use of at least three different media.

2.3 Develop skill in using mixed media while guided by a selected principle of design.



Repoussé, press mold, and casting

Communication and Expression Through Original Works of Art

2.5 Interpret reality and fantasy in original two-dimensional and three-dimensional works of art.

2.7 Create a series of works of art that express a personal statement demonstrating skill in applying the elements of art and the principles of design.



press mold, casting, and jewelry design

## 3.0 HISTORICAL AND CULTURAL CONTEXT

Understanding the Historical Contributions and Cultural Dimensions of the Visual Arts

Students analyze the role and development of the visual arts in past and present cultures throughout the world, noting human diversity as it relates to the visual arts and artists.

Role and Development of the Visual Arts

3.1 Research and describe how art reflects cultural values in various traditions throughout the world.

## Diversity of the Visual Arts

3.2 Compare and contrast works of art from various periods, styles, and cultures and explain how those works reflect the society in which they were made.

### 4.0 AESTHETIC VALUING

#### Responding to, Analyzing, and Making Judgments About Works in the Visual Arts

Students analyze, assess, and derive meaning from works of art, including their own, according to the elements of art, the principles of design, and aesthetic qualities.

#### Derive Meaning

4.1 Explain the intent of a personal work of art and draw possible parallels between it and the work of a recognized artist.



Lauren wears press-mold piece she made. Timbuktu guide wears native silver pouch

#### Make Informed Judgments

4.3 Take an active part in a small-group discussion about the artistic value of specific works of art, with a wide range of the viewpoints of peers being considered.



Do manuscripts have artistic value even if they are water stained?

4.4 Develop and apply specific and appropriate criteria individually or in groups to assess and critique works of art.

### 5.0 CONNECTIONS, RELATIONSHIPS, APPLICATIONS

Connecting and Applying What Is Learned in the Visual Arts to Other Art Forms and Subject Areas and to Careers

Students apply what they learn in the visual arts across subject areas. They develop competencies and creative skills in problem solving, communication, and management of time and resources that contribute to lifelong learning and career skills. They also learn about careers in and related to the visual arts.

### Connections and Applications

5.1 Study the music and art of a selected historical era and create a multimedia presentation that reflects that time and culture.



Ali Farka Touré poster in his home town of Niafunke and a singer--with Touré--wearing mud dyed textiles.



Four photos taken in Timbuktu museum of musical instruments: Drum made over a pottery armature, thumb piano, drum stretched over gourd, and stringed instruments with flute in foreground.



Almadane Traore of Timbuktu makes straw jewelry that imitates traditional gold designs for those who can't afford real gold. Real gold is worn against a white dress in fourth photo. Rest of the "jewelry" is straw.

### Visual Literacy

5.3 Examine art, photography, and other two and three-dimensional images, comparing how different visual representations of the same object (*fabricating jewelry in straw or gold*) lead to different interpretations of its meaning, and describe or illustrate the results.

## Content Standards:

### Grade Seven

#### CALIFORNIA STATE HISTORY~SOCIAL SCIENCE FRAMEWORK

What students should know: **World History and Geography: Medieval and Early Modern Times** GROWTH OF ISLAM

- Demonstrate an understanding of the major people and developments in the spread of Arab civilization between the seventh and tenth centuries.

## AFRICAN STATES IN THE MIDDLE AGES

- Understand the political, economic, and cultural life of sub-Saharan civilizations in the period from 800-1600 A.D.

## HISTORICAL THINKING: SAMPLE ASSIGNMENTS - SEVENTH GRADE

- Examine/discuss slides of African art (TCI) in terms of purpose and materials.
- Compare lands and trade routes shared by African states and Islamic travellers.

### African States in the Middle Ages and Early Modern Times

This unit begins with a geographic survey of sub-Saharan Africa and the landforms, climate, vegetation, rivers, and resources associated with its major geographic regions.

Students should analyze the importance of an iron technology and of geographic location and trade in the development of the sub-Saharan empires of Ghana and Mali. Both became states of great wealth-Ghana, by controlling the trade in gold from the south; and Mali, by controlling both the southern trade in gold and the northern trade in salt. Both kingdoms exercised commercial, cultural, and political power over a large part of Africa.

The Muslim conquest of Ghana ended in destruction of the kingdom (1076). Mali's rulers, on the other hand, converted to Islam. Under Islamic rule, the nation achieved recognition as a major power Its leading city, Timbuktu, with its university became known throughout the Muslim world as a center of learning, a tradition that lasted through Mali's conquest by Songhay in the fourteenth century and Songhay's fall two centuries later to Moroccan invaders.  
<http://www.teachingamericanhistory.us/standards/grade7.html>

### Learning Objectives:

Students will be able to:

Identify and describe scale (proportion) as applied to two-dimensional works of art like doors in Timbuktu.



discuss the obstacles that made a journey to Timbuktu a difficult one as well as learning about the first European to make the journey to Timbuktu in the 19th century.



Take an active part in a small-group discussion about the artistic value of specific works of art, with a wide range of the viewpoints of peers being considered.



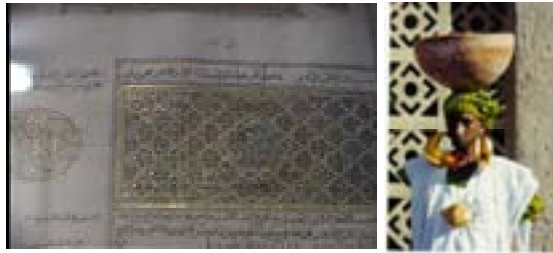
Research and describe how art reflects cultural values in various traditions throughout the world.

Compare and contrast works of art from various periods, styles, and cultures and explain how those works reflect the society in which they were made.

Study the music of the “Bluesman of Africa,” Ali Farka Toure (Niafunke)<sup>3</sup> and art of a selected historical era and create a multimedia presentation that reflects that time and culture.

develop basic skills in tooling metal safely.

Identify at least two art works of gold



explore the relationship between art and music of Timbuktu

understand the difficulties that people encountered when traveling in the 13th to 15th centuries.

comprehend the changes that technology has made in our lives and travels.

gain awareness of the salt and gold trade routes to Timbuktu and how the exchange of ideas effected world history.



appreciate the variety of peoples and cultures who shared the ancient trade and pilgrimage roads.

expand vocabulary and learn the meaning of such words as casting

show evidence of reading at least one book on Timbuktu at his/her reading ability

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<sup>3</sup> 37<sup>th</sup> Annual Smithsonian Folklife Festival: Appalachia: Heritage and Harmony; Mali From Timbuktu to Washington; Scotland at the Smithsonian, June 25-July 6, 2003 Washington D.C, Program, Washington, D.C.: Smithsonian Center for folklife and Cultural heritage. 2003. p. 124.

## Vocabulary:

### **Ahmed-Baba**

Highly distinguished historian, professor, and scholar. The old manuscript museum (Fig. ) is named after him.

### **Banco**

The major building material of Timbuktu is mud mixed with shea butter and clay.

### **Berky**

The first American explorer who began crossing the desert in 1913 from Biskra to Timbuktu. His residence is located facing the Timbuktu Koy Batumi Municipal Museum the wells Bouctou.



Moroccan style window on the former Barth residence

### **Barth, Heinrich, M.D.**

German explorer who lived in Timbuktu, 7 September 1853 to 1854. His former residence is situated in Badjindé which is a district of the old city heritage. The front bears a bronze plaque, unveiled in 1966 by the President of the RFA. This house was restored in 1992 with the assistance of Germany.

### **Ibn Battuta (1304-1368)**

He made a famous journey to Timbuktu.



René Caillié in 1828

### **Caillié, René**

Caillié was a French explorer who came to Timbuktu on 20 April 1828. His house in the district of Djingareiber is nearly seventy meters to the east of the Laing residence. It is in a state of advanced deterioration. However, the residence is still marked by two plaques:

- A bronze plaque bears the inscription: "Remembering Colonel French. A. René Caillié 1799-18338. He lived in this house from April to May 1828 during his trip to Guinea in Morocco 9 April 1827, 7 September 1828.

- A marble plaque bearing the words "Those of Aunis and Saintonge keep the ashes and the memory of René Caillié gave this stone in 1938 commemorating its centenary Louis-Dubreuil Ardouin, Saintongeais explorer to reach across the Sahara Timbuktu in the house inhabited their great patriot. "

### **Cisse , Baba, Architect**



Baba Alpha Ismael Cisse is an urban architect born in Timbuktu. He is the direct interlocutor for UNESCO's Cultural Mission of Timbuktu. He is also on the team of the greater South African-Mali Presidential Project which aims at the preservation and promotion of the rich and ancient legacy of African scholarship in this ancient city. The team made their first visit to Timbuktu in 2004 to plan the new library to house the manuscripts and an education center. The library, which was designed by architectural firm DHK, of Cape Town, in consultation with famous Malian architect Baba Cisse, will be built using indigenous materials and construction methods, which focus on the use of mud and clay. Ann Fuerst interviewed Cisse in 2003. The goal is to revive tourism and certainly an interest in the "ink road"

### **Djingareiber Mosque**

Architectural gem, built from 1325 by Ibrahim Abu Ishaq who received Essahel hands of Mansa Moussa Elhadj forty miles Mitqals gold. This mosque has two minarets, twenty-

five rows in a north south and nine in an east-west. Its massive pillars, its inner courtyard and the minaret of the main pyramid are the characteristics of its architectural style belonging to the Sudan since 1989 this Mosque on the list of World Heritage in Danger has a "preservation project" managed by the Center World Heritage of Unesco and the Ministry of Culture.



### **kwottenai kanye (*quote-an-eyee canee*)**

This lesson is about mostly about embossing or Repoussé using sheets of metal. One of the most stunning examples of gold sheet metal that has been fashioned into jewelry is the pair of earrings worn by Fulani women. These earrings, made of 14-carat gold, are given to women when they marry, or when their mothers die.<sup>4</sup> They are so heavy that when the women wear them, often with little red silk strings looped through their pierced ears, they also attach a string to the earrings, and wear that string over their head to support the weight. It is said that if a woman doesn't inherit her jewelry from her mother, the woman's husband has to buy the gold earrings, usually selling off many of his animals to raise the cash. He claims, "each earring weighs more than a human heart."



Fig. 17: Alex Gordon Laing House

### **Laing, Gordon**

In 1826, Major Gordon Laing was visiting the city. He was taken for a merchant of slaves, a competitor and he was assassinated.

<sup>4</sup> <http://bowersmuseum.blogspot.com/2007/03/object-of-week-fulani-kwottenai.html>

## Madrasah

The University of Sankore was a Madrassah. Unlike universities of medieval Europe, the university or madrassah of Timbuktu was composed of several entirely independent schools or colleges, each run by a single master or imam. The courses took place in the open courtyards of mosque complexes or private residences.<sup>5</sup>



Depiction of Mansa Musa, ruler of the Mali Empire in the 14th century, from a 1375 Catalan Atlas of the known world (mapamundi), drawn by Abraham Cresques of Mallorca. Musa is shown holding a gold nugget and wearing a European-style crown. The section to the right translates as: *This Negro lord is called Musa Mali, Lord of the Negroes of Guinea. So abundant is the gold which is found in his country that he is the richest and most noble king in all the land.*<sup>[1]</sup> Literally, in the text he is called *musse melly*.<sup>6</sup>

## Mansa Musa

Associated with architecture in Timbuktu and the gold trade. In the 14th year of his reign (1324), he set out on his famous pilgrimage to Mecca. It was this pilgrimage that awakened the world to the stupendous wealth of Mali. Traveling from his capital of Niani on the Upper Niger River to Walata (Oualâta, Mauritania) and on to Tuat (now in Algeria) before making his way to Cairo, Mansa Musa was accompanied by a caravan consisting of 60,000 men including a personal retinue of 12,000 slaves, all of whom were clad in brocade and Persian silk. He also brought with him 80 to 100 camels loaded with 300 pounds of gold each. The emperor rode on horseback and was directly preceded by large building program, raising mosques and madrasas in Timbuktu and Gao. The Great Mosque, a contemporaneous and grandiose structure in Timbuktu, was built of cut stone.<sup>7</sup>



## Mungo Park (1771-ca.1806)

<sup>5</sup> Wikipedeia

<sup>6</sup> Accessed August 11, 2009. [http://en.wikipedia.org/wiki/Musa\\_\(mansa\)](http://en.wikipedia.org/wiki/Musa_(mansa))

<sup>7</sup> Accessed August 11, 2009. [http://en.wikipedia.org/wiki/Musa\\_\(mansa\)](http://en.wikipedia.org/wiki/Musa_(mansa))

He was the first European to reach the Niger river. On his second journey down the river he passed by Timbuktu but was not able to make it to the city due to local aggression. He drowned in the Bussa rapids a few hundred miles further down river.



### **Pinesse**

One of the “roads” to Timbuktu is the water route. Most travelers use a pinesse. In the second photo, notice there is a pinesse passing by on the Niger river (pronounced KNEEsure) while people thrash grain with sticks.

### **Repoussé**

A sheet metal crafting technique used by many ancient civilizations. The metal is marked with a blunt stylus on one side, then for emphasis and depth, retraced (pushed out again) on the back.



### **Samessekou, Amadou--jeweler**

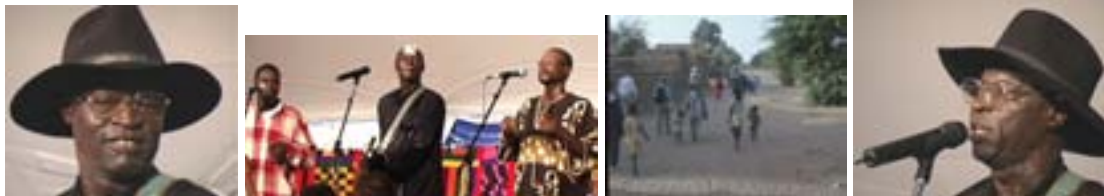
Mr. Samessekou (nicknamed “Topin”) is the proprietor of Bijouterie “Venise” - Mopti, a boutique specializing in traditional and modern jewelry. He is a master jeweler who works primarily with precious metals (gold, silver, bronze etc.) and gems in creating unique bracelets, necklaces, earrings etc.

With more than 30 years of knowledge in the field, Mr. Samassekou began as an apprentice at the National Institute of Arts in Bamako until eventually settling in his native Mopti. He has a wealth of experience participating in trade fairs throughout West Africa, France (Hermes) and the United States (2003 Smithsonian Folklife Festival).



**Timbuktu (English); Temboctou (19<sup>th</sup> cent. French); Tombouctou (German)  
Tumbutu (original Songhai)**

There are many different spellings for the town. This well and water bag at the museum in Timbuktu are symbols of the original site of the woman who kept Bouctou baggage of the founders of the city. Following the deformation of the word targui Tin Bouctou or wells Bouctou became Timbuktu Tinbuktu / Timbuktu, Timbuktu. The place also symbolizes the palace of Mohamed Nadda said to be the chief or the Mayor of 1433-67. It was he who in 1400 funded the construction of the mosque of Sidi Yahia. Today it is an endangered World Heritage Site.<sup>8</sup>



**Ali Farka Touré (1939-2006)**

One of the most internationally successful West African musicians of the '90s. Ali was a guitarist from Niafunke. Other than the guitar, he played instruments such as calabash and bongos. He shared with John Lee Hooker (and similar American bluesmen like Lightnin' Hopkins) a predilection for low-pitched vocals and midtempo, foot-stomping rhythms, often playing with minimal accompaniment. This talented Musician won a Grammy for his *Talking Timbuktu* CD with Ry Cooder in 1994. He was born in Kanau, in the Timbuktu region. Pictured above in concert in Washington, D.C. by Ann Fuerst at the 37<sup>th</sup> Smithsonian Folklife Festival 2003.

**World Heritage List**

Timbuktu was inscribed in 1988 on the UNESCO World Heritage List, then put on the endangered list from 1990-2005.<sup>9</sup> This writer visited in 2002.

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<sup>8</sup> Accessed July 10, 2009 <http://www.tombouctou2006.net/fr/saints.html>

<sup>9</sup> Reference number 119. <http://whc.unesco.org/en/list/119>



## Materials:

### Timbuktu University Door “Silver” Decorations

The silver door decorations and ornamentations in Timbuktu, are quite elaborate. But they are NOT *Repoussé*. They are sheets of metal worked by a black smith or cast. However, because of the sheet metal tradition, e.g., gold jewelry, an effort has been made to include two traditional methods of working with metal: *Repoussé* and Casting. Here is a list of materials and a method or two for making your own doors and ornaments in the style of Timbuktu.

#### A. *Repoussé* Decorations

- Metal aluminum foil (soft, light weight .005 thick 36 gauge embossing sheets)
  - [www.ksmetals.com](http://www.ksmetals.com) Stock No. 6025 for a 12” x 30” roll or AMACO 50068T (about 3” square per student so each student can make a practice piece and about 9” square per student so each student can make about two ornaments.)
- Punching awl (optional)
- Inscriblio engraving tool (optional)
- Metal hole Punch set
- Popdots for adhering the foil to the “door” (optional)
- Wooden tools
- Copies of the patterns for YOUR files
- Copies of the patterns for each student
- Pad of paper or cloth like a mouse pad about 3/8” thick
- Fiber glass fabric wood grain look
- Filling paste and spatula (optional)

Needle and thread (brown) or duct tape for hemming the fabric door  
 Brown rope or cord  
 Wooden dowels  
 Scissors designed for cutting metal  
 gloves and safety glasses  
 First-aid kit  
 Patterns  
 Ruler  
 Embossing stylus (optional)  
 Tape or hermafrix dot adhesive (to attach pattern to foil)



1. Give a visual and musical introduction to the lesson.
2. Divide the class into five groups. Each group will be randomly assigned patterns from one of the five doors.



3. Begin by copying the paper patterns for your files. Then give the other paper patterns to students representing the decorative metal cutouts. Notice that the pattern pieces below are identified to indicate upon which

door they appear. Students can fold some of the patterns to make them more symmetrical. However, these patterns were designed by tracing digital images of the doors to show the actual work of the desert artisan..

4. Cut the foil conservatively into sections and distribute. One possibility is to have a cut pattern attached to the cut foil when distributed.



5. lay a piece of padding down first, then the metal foil, and then secure the pattern to the foil with tape or hermafix dot adhesive.
6. With a blunt wooden tool, trace the design onto the foil.
7. Lightly trace the pattern with a stylus on one side around all the outlines. Re-emboss the foil after removing the pattern. Then turn the foil over and place it on a harder surface and tool along the edges of the embossed lines. Touch up with a ruler for straight lines. For a “3-D” design, turn the foil over and retrace or detail with a larger rounded tool beyond the lines. The goal is to force the background area back down.



8. Wear gloves and safety glasses. Cut out the design (caution: sharp edges can hurt). To give the design more stability fill the back with plaster-of-Paris or filling paste. The paste can be applied with a spatula and dries quickly.
9. Make a door! Attach the metal appliqué to the chosen door surface. Choose a piece of wood or wood grained material. Students might make their own wood-grained material with paint on butcher/craft paper in a mural style. The wood-grained



fiberglass fabric pictured was created for station wagon and boat owners. Quinn is using silver wrapping paper cutouts to estimate size and layout.  
10. Lead a discussion and critique about the doors the students have created.

### Motivation:

- Decorate the room with "oases" stations along the salt, gold or "ink" routes across the Sahara to Timbuktu. Each station will have books, artifacts and other manipulatives from different trade routes. Let students spend time at the different stations and explore the items that represent that part of the Sahara. Try to have a few pieces of Tuarag and Sonrai clothing in the room as well, so they can try the clothes on. Set up stations as follows: Timbuktu, Gold, (Salt), and Manuscripts.

### Procedure:

#### B. Timbuktu University Door Hinge Slip-cast Jewelry Mold

**The silver door decorations and ornamentations in Timbuktu, are quite elaborate. Here is a method for making the plaster molds for casting these beautiful designs to make inexpensive jewelry.**

#### Materials

Paper patterns

Rolling pin

Plastic film or food wrap

scissors

Plaster of Paris

Cutting wire

Cutting needle

Bucket for mixing plaster

Rubber or latex gloves

Protective Mask

Plastic or foil containers like milk cartons or frozen food trays

containers for setting plaster

Clay

Trimming needle

Measuring cup

Newspapers/drop cloth

Mixing stick

Sand paper, coarse

1. Prepare and cut out the pattern for the slab pieces. For this lesson your patterns for the Timbuktu door ornaments are below. They are not to scale.
2. Prepare a thin slab of clay about 1/4" between two sheets of plastic film.
3. Lift one sheet of plastic film and position a pattern or two. Lay the pattern(s) on top of the clay slab and replace the film. Roll out the clay again which will set the pattern briefly in the clay (Fig. ).



Fig. : with patterns position on a clay slab, between two pieces of plastic film, gently use a rolling pin to set the patterns in the clay.  
Fig. : Use a cutting needle to cut around the patterns; Peel off the paper. Fig. : Gently separate the clay forms from excess clay and set aside and cover with plastic film.

4. Use a needle to cut out the clay around the pattern. Gently separate the clay forms from excess clay and set aside. Carefully remove the pattern patterns and save for future use.
5. Wrap in plastic to keep the shapes moist and flexible.

#### Prepare the mold

Gather all the needed materials. Cover the working area with newspapers or work in a yard.



Fig. : Prepare all your materials:



Fig. : Measure water first;



Fig. : Measure Plaster-of-Paris

1. Measure water in the bucket. You will need one part cold water to every one and a half cups of Plaster-of-Paris.

2. Put on a protective mask. Measure the dry plaster-of-Paris and add to the water in the bucket. (Do not add water to the Plaster-of-Paris in the bucket. Water should be in the bucket first.)



3. Put on latex gloves. Stir with a stick and then with your gloved hands. Squeeze the material gently to disperse lumps.

4. Pour the mixture evenly into plastic containers to about one inch deep to create the basis for the molds. You may remove the protective mask.

5. Check the containers often in 4 to 10 minutes as the plaster begins to set.



6. Gently press the cut-out clay forms into the setting plaster. If they start to sink, the plaster has not set enough. Remove them quickly and gently clean for reuse.

7. Once the plaster is set and the clay is still flexible, gently remove the clay shape. Remove the mold from the container to dry thoroughly. Drying may take 24 hrs.

8. After the mold is dry, take a sharp knife and remove any undercuts that will prevent a good cast.

9. Pour slip in the molds. Do not worry if the tops are not very even. But you do need to allow an hour or two once you pour the slip for the shapes to set. Gently slip a sharp knife into the clay shape and lift cautiously. Keep the clay shapes moist in film until all shapes have been removed. Trim and pierce shapes with cocktail drinking straws.

After the greenware shapes have been removed from the molds, and they have dried thoroughly, put on a protective mask (from clay dust) and sandpaper both sides carefully. Put the sandpaper on a flat surface covered with newspaper, and with a circular movement, lightly sand each side. This will make the shapes instantly smooth and very thin.

Fire and paint or glaze.



## B.1 Timbuktu University Door Hinge Press-mold Jewelry

Plaster molds

Cutting wire

Sculpty or firing clay

Silver acrylic paint

Brush

Water and dish

Drinking straws of different sizes

Paper towels

Glitter glue

Trimming needle

Tiger tail

Beads from old jewelry or seed beads

(Use old beaded clothing. A beaded top or beaded belt from a thrift store may be cheaper than buying new beads. Give each student a baby food jar/ plastic bag and a section of the blouse or dress to disassemble)

Crimp beads

Jeweler's pliers and cutter

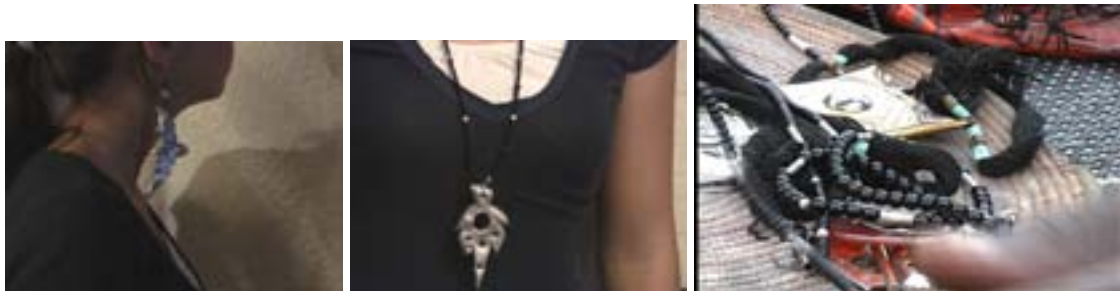
Gauge wire and mandrel for jump rings

Oven or kiln

1. Use a cutting wire to cut the material to go in the molds.
2. Press in the molds carefully so as not to break them.
3. Remove clay piece and trim with a trimming needle.
4. Use straws of different sizes to make holes.
5. Follow drying and firing/baking instructions for the selected media.
6. Lauren's silver jewelry of Sculpty was painted twice with a silver acrylic and set aside to dry. Then it was painted once with silver glitter paint and dried again. A final cut of silver glitter paint added to the sparkle.
7. She placed a crimp bead on the end of 18" of tiger tail then threaded seed beads and alternating large black and silver beads. She only needed one jump ring for the pendant.



Begin with a mold, then press material into the mold, cut off excess and punch holes with a straw.



Look through bead books to get ideas for your jewelry. Timbuktu salesmen spread out jewelry on mats right on the desert floor. Notice the patterns of threading their beads.

## B.2 Slip-cast Glazed Jewelry



Bisque-fired slip-cast pieces can be coated with acrylic or glazes and silver over glaze.  
**Timbuktu University Door Hinge Slip-cast Jewelry**

### Materials

- Clay casting slip
- Plaster molds
- Drinking straws, especially cocktail
- Sandpaper
- scissors
- Protective mask
- newspapers
- Kiln

brush

Glaze or acrylic paint

Over-glaze

1. Use a measuring cup with a spout to pour slip into the dry molds. Wait a few hours. The molds are so shallow it wont be necessary to pour off excess slip.
2. With the help of a sharp instrument pick out the cast piece gently. Trim.
3. Use straws of different sizes to make holes. Squeeze out the extruded clay or cut off the end of the straw.

After the greenware shapes have been decorated, and they have dried thoroughly, put on a protective mask (to protect your lungs from clay dust) and sandpaper both sides carefully. Put the sandpaper on a flat surface covered with newspaper, and with a circular movement, lightly sand each side. This will make the shapes instantly smooth and very thin.

4. Bisque fire when dry. Or paint with under glaze and bisque fire. Lauren's bisque fired samples were painted twice with a silver acrylic and set aside to dry. Then painted once with silver glitter glue and dried again. A final cut of silver glitter glue added to the sparkle.
5. Lauren also made glaze-fired pieces. The green-colored coating is a clear glaze. Apply and fire. A silver over glaze will give it elegance after still another firing.



## Assessment:

(Select the criteria that fit your assignment and add your own)

The Rubric for the Timbuktu doors:

Requirement	Possible points	Points earned
(1) Following instructions	10	
A) good foil concavity (areas pushed back)	2	

B) good foil convexity (areas pushed forward)	2	
C) clarity of edges around each form	2	
D) skill in cutting foil	2	
E) practiced safety	3	
F) successfully finished practice piece before beginning project	2	
G) Ability to discuss the obstacles that made a journey to Timbuktu a difficult one as well as learning about the first European to make the journey to Timbuktu in the 19th century.	3	
H) Took an active part in a small-group discussion about the artistic value of specific works of art, with a wide range of the viewpoints of peers being considered.	4	
I) Practiced basic skills in tooling metal safely.		
J) showed evidence of comparing and contrasting works of art from various periods, styles, and cultures and explained how those works reflect the society in which they were made.	4	
K) Demonstrated awareness of the salt and gold trade routes to Timbuktu	2	
L) Comprehends the changes that technology has made in our lives and travels.	2	
M) Can list difficulties that people encountered when traveling in the 13th to 15th centuries.	2	
N) Has explored the relationship between art and music of Timbuktu	3	
O) Can Identify at least two art works of gold	2	
P) used neatness and conservation in material usage	7	
Q) Based jewelry and ornaments design on ethnic desert designs including doors	5	
R) Showed evidence of reading at least one book on Timbuktu at his/her reading ability	20	
S) student did sufficient research to answer questions correctly	10	
T) student used a variety of sources such as books, and web sites	4	
U) student exhibits an acceptable level of knowledge about the subject	4	

V) Presented evidence of the study of the music of the “Bluesman of Africa,” Ali Farka Toure (Niafunke) <sup>10</sup> and art of a selected historical era and went the extra desert mile to create a multimedia presentation that reflects that time and culture. Student knows why he may have been called the “Bluesman of Africa” in reference to his music and maybe by what he wore.	10	
W) student was creative and an asset in development of a door design	4	
X) Identified and described scale (proportion) as applied to two-dimensional works of art like doors in Timbuktu.	2	
Y) Correctly identified 75% or more vocabulary words	10	
TOTAL		

### Extensions:



Depiction of Mansa Musa, ruler of the Mali Empire in the 14th century

Follow the “ink road”. Have students create illuminated manuscripts in the style of the 14<sup>th</sup> century artist Abraham Cresques of Mallorca, or the scholars whose works on optometry and biography of Muhammed appear in the manuscript museum.

Make a rubber stamp of words found on a manuscript and imprint it in clay.

### Photo and Illustration Credits

Ann Fuerst and Elmer Taylor on their separate journeys to Timbuktu took most of the photos. Some are from other sources. CAEA members may use the Fuerst and Taylor

<sup>10</sup> 37<sup>th</sup> Annual Smithsonian Folklife Festival: *Appalachia: Heritage and Harmony; Mali From Timbuktu to Washington; Scotland at the Smithsonian, June 25-July 6, 2003 Washington D.C, Program*, Washington, D.C.: Smithsonian Center for folklife and Cultural heritage. 2003. p. 124.

photos for educational purposes. This lesson and photos they took are ©copyright 2009 by Art Plus of San Diego. For permissions contact [veryrt@aol.com](mailto:veryrt@aol.com). CAEA has permission to use this and other lessons by Fuerst on a CD for distribution at the 2009 conference.

## Bibliography for Teen /Juvenile Reading:

Auster, Paul. *Timbuktu*. New York: Penguin Group. 2008

Brook, Larry. *Daily Life in Ancient and Modern Timbuktu*. New York: Lerner Publishing Group. 1999.

A heads-up on the illustrations. Illustrator incorrectly places Djenne and Timbuktu on illustrated map.

Kessler, Christina. *Trouble in Timbuktu*. New York: Penguin Group. 2009.

Ziefert, Harriet. *From Kalamazzo to Timbuktu*. New York: Chronicle Books. 2005.

A heads-up on the illustrations. Illustrator chose the Great Friday Mosque in Djenne to represent Timbuktu instead of the Sankore Mosque in Timbuktu.

## Media

### Ali Farka Touré and Ry Cooder CDS3194-2

Album: Devil Wage; Cheri Soukorsa; Gomni; Segalare; Amandrai; Lasidan; Ketto; Banga; Wali Du, and Diarabi.

### Ali Farka Touré and Ry Cooder *Talking Timbuktu* Label: Hannibal

(March 29, 1994) ASIN: B00000062H

Grammy winning album. Album: Bonde; Soukora; Gomni; Sega; Amandrai; Lasidan; Kelto; Banga; Ai Du; and Diaraby

## Internet

Karima Diane Alavi, New Mexico. *Journey Along the Silk Road: Writing Your Own Rihla, or Travel Journal* <http://www.islamproject.org/education/RihlaTravelJournal.htm> Accessed July 10, 2009

*The African city of Timbuktu*: BBC report on the historical and the modern city of Timbuktu <http://news.bbc.co.uk/1/hi/world/africa/1911321.stm>

Description of Timbuktu by Hasan al Wasan, (Leo Africanus), the 16<sup>th</sup> C. Muslim scholar  
[http://www.wsu.edu:8080/~wldciv/world\\_civ\\_reader/world\\_civ\\_reader\\_2/leo\\_africanus.html](http://www.wsu.edu:8080/~wldciv/world_civ_reader/world_civ_reader_2/leo_africanus.html)

A history of Timbuktu with links to other sites  
<http://africanhistory.about.com/library/weekly/aa031901a.htm>

Short history of Mansa Musa, famed African King <http://www.mrdowling.com/609-mansamusa.html>

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Godlas, Sylvia. *Doorways to Islamic Art*. (AWAIR) 1997 ([www.awaironline.org](http://www.awaironline.org))

### [Islamic Architecture](#)

Islamic Arts and Architecture is a non-profit organization dedicated to providing information on the visual arts of Islamic culture.

### [Save Our History: "Mansa Moussa: Pilgrimage of Gold"](#)

Information about Timbuktu from the History Channel's *Save Our History* series.

### [Mansa Musa](#)

From Harcourt Publishers, a biography of Mansa Musa, founder of the Muslim center of learning at Timbuktu.

### [Timbuktu](#)

A brief, easy-to-read history of Timbuktu from Mr. Dowling, a middle school teacher in Florida.

### [Science & Mathematics in Medieval Islamic Cultures](#)

Information on the Golden Age of Islamic learning.



## Books

*Islamic Designs for Artists and Craftspeople*. Dover Publications (DoverPublications.com)

Dunn, Ross. *The Adventures of ibn Battuta, a Muslim Traveler of the 14<sup>th</sup> Century*. (University of California Press, Berkeley) 1989.

## Magazines

Saudi Aramco World ([www.aramcoservices.com](http://www.aramcoservices.com)) Great color photos to use for bulletin boards, art projects and student posters. Free to teachers and students. Class set available at no cost.

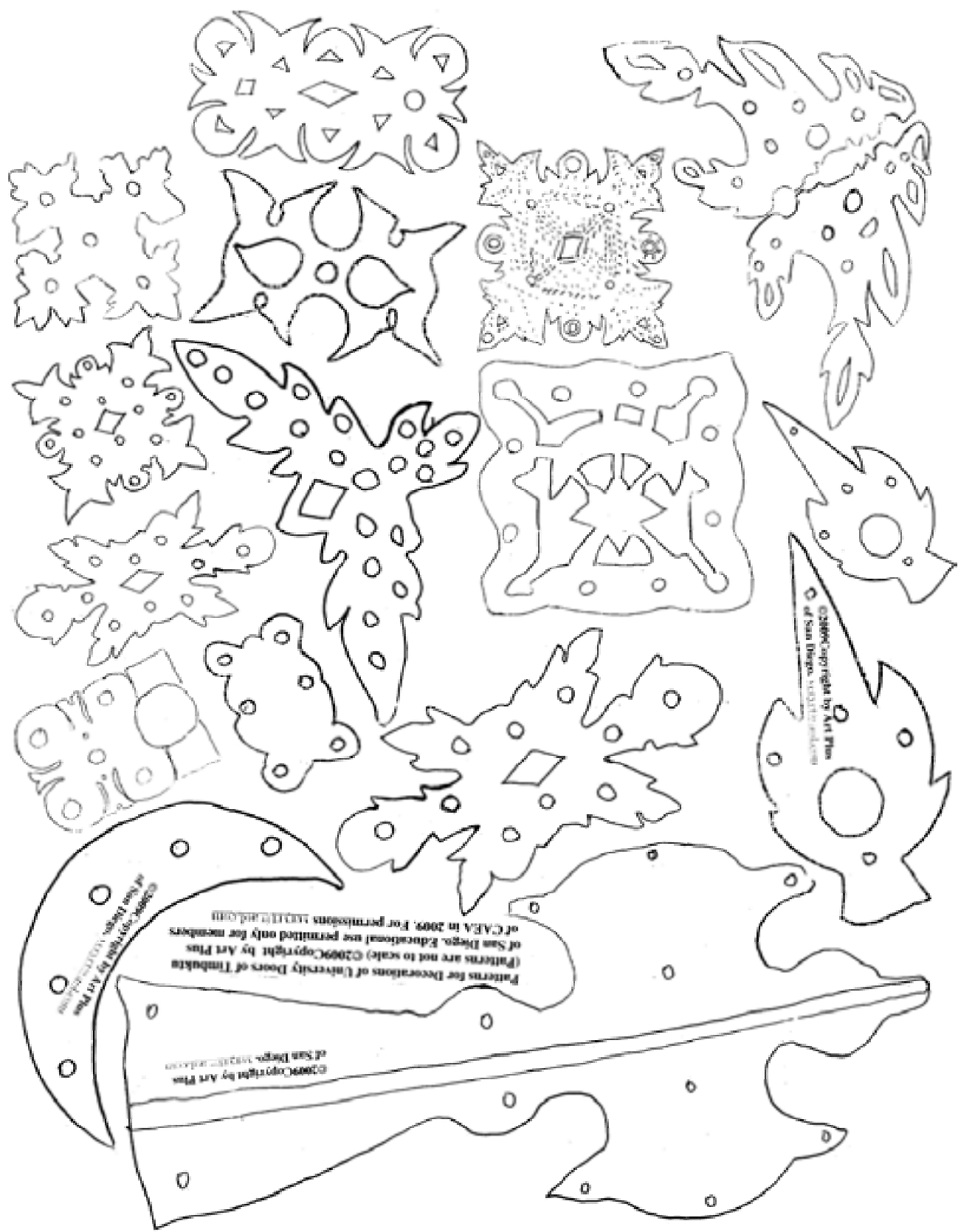








This photo, such as it is, is to give students an image for ornament placement when designing a door.



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