

# HANDS-ON CLAY

An exploration of mankind's unique relationship with clay

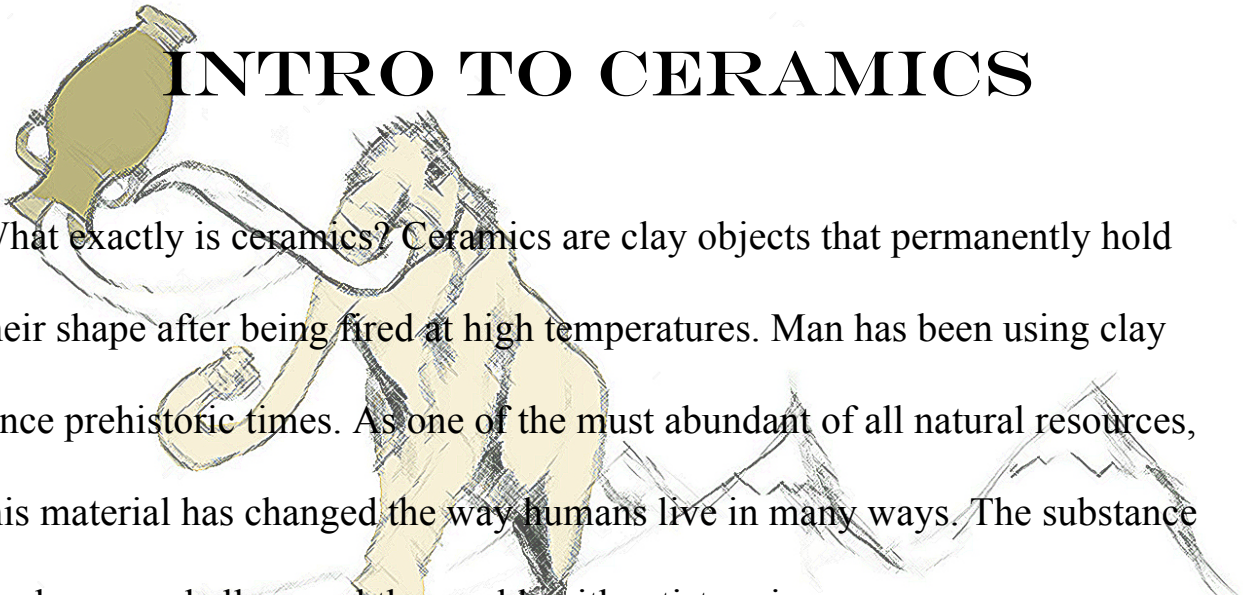


# CHAPTER 1

# INTRODUCTION TO CERAMICS

# INTRO TO CERAMICS

What exactly is ceramics? Ceramics are clay objects that permanently hold their shape after being fired at high temperatures. Man has been using clay since prehistoric times. As one of the most abundant of all natural resources, this material has changed the way humans live in many ways. The substance has been used all around the world, with artists using many of the same techniques for thousands of years. How is it that people separated by oceans, time, and language barriers all learned to process, shape and fire clay in similar fashion? Clay served early man's needs by providing a versatile material that could be tailored to suit many different needs. Charles Fiske, historian and writer of The Emergence of American Clay Art, said, "Clay is capable of the wildest, materially substantial poetry. It comes very close to being a sacred medium; on the other hand, it comes



Pottery Dating between 1000 and 1700 B.C. Found along the Mississippi

close to being one of the most vulgar mediums man uses. It is at once eternal and absolutely momentary. Things have survived that are 5000, 6000, 7000 years and older and they can all be smashed to nothing with one hammer.”

Today modern man still uses clay for a myriad of different purposes.

Ceramics are used in applications like the tiles in kitchens and bathrooms that are found all across the globe. Glazed tiles are durable, yet easy to clean and do well with repeated exposure to moisture. Obviously, cookware and dinnerware has been made using clay for thousands of years. With the advent of the Industrial Revolution, modern man has continued this tradition with the use of technology and more advanced processes. The oldest discovered bricks date to 7500 B.C. and were found at Tell Aswad, in the upper Tigris region and in southeast Anatolia, close to Diyarbakir. It has been estimated that a trillion bricks are made each year world wide. Bricks are a critical



ingredient in architecture all around the world. Clay has provided a sturdy, sanitary and cost effective way to make toilets that are found all throughout the developed world.

Clay has several more unexpected applications as well. Ceramic panels have been used since the beginning of the space program. These panels provide protection from the heat generated on entering and exiting earth's atmosphere. Automobiles use ceramic components in catalytic converters to convert harmful emissions into non-toxic gases. Modern medicine has also benefited from ceramic applications; ceramic materials are used to stimulate bone growth around artificial joints. Also, if you have ever had a tooth colored crown at your dentist, chances are pretty good that the material used is ceramic. Ceramic components are used every day in high-tech technology like televisions, computers, and electric motors like vacuums and blenders. So it should be pretty obvious that man has a very intimate understanding of clay. We have a great history of using clay to suit our needs. The question then arises, what is clay and how does it form? Is it just mud, or is there something more to it?

Clay is formed by the erosion and decomposition of the earth's surface (igneous rock) over thousands of years. The constant breaking down of igneous rock by wind and rain relocates particles of silica and alumina by streams and rivers that cut and shape our lands. These newly relocated

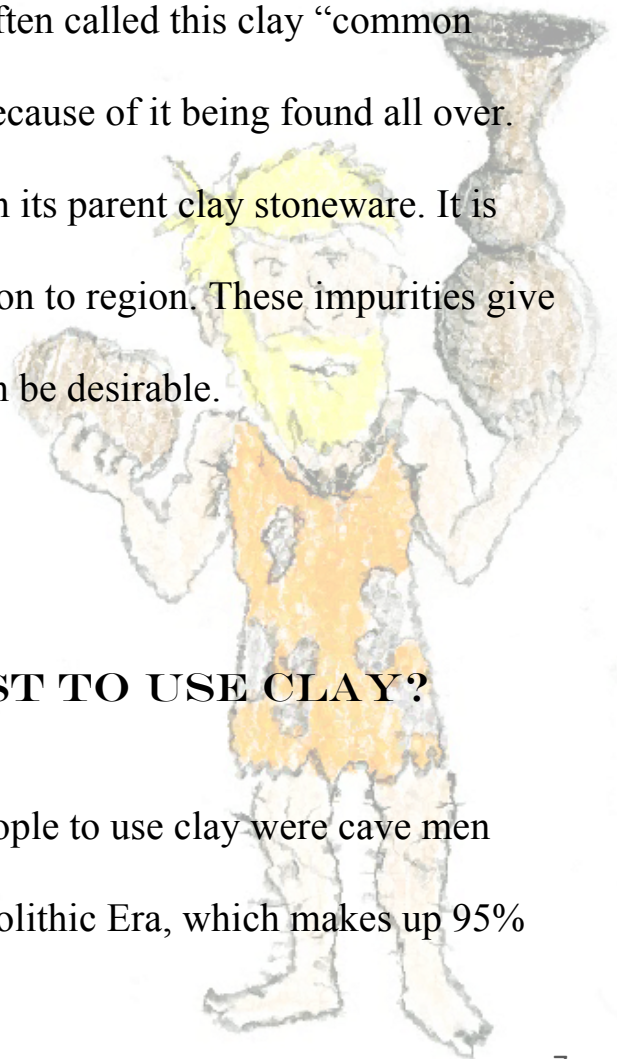
particles become the seeds that will ultimately become clay. The addition of decomposed plant and animal matter and various other natural amendments



make a menagerie of different clay bodies all over the world. The formula for clay can be seen here. There is one molecule of alumina, two molecules of silica, and two water molecules.

Clay is broadly classified in order of its evolution. The first classification is the newer or purer clay, and then the older clays that have more additives are listed last. The process of decomposition of igneous rock is a constant happening. It is a continual process. Another interesting consideration in the formation of clay is that, generally speaking, the further clay is from its parent source or site of initial erosion, the smaller the particle size. This varying particle size factors heavily in the plasticity or flexibility and its ability to be manipulated. Clay begins its journey at the parent source.

By weathering through wind and precipitation, small particles begin to drift away in rivers and streams. The first major category of clay is called stoneware. Stoneware is a grey to buff, non-translucent clay body which vitrifies or crystalizes between 2150- 2383 degrees. Stoneware is fairly plastic but does have some limitations. Potters have often used stoneware to throw pieces on the wheel but commonly mix it with another clay that might offer more plasticity or a desired color. The next category of clay is known as earthenware. Unlike stoneware that are more sparsely located, earthenware is found all over in the world. People have often called this clay “common clay”. Some people call it common clay because of it being found all over. Whatever you call it, it is more plastic than its parent clay stoneware. It is also full of impurities that differ from region to region. These impurities give earthenware unique characteristics that can be desirable.



## **WHO WERE THE FIRST TO USE CLAY?**

Historians speculate that the first people to use clay were cave men living during the Paleolithic Era. The Paleolithic Era, which makes up 95%

of mankind's time on earth, spans from 2.6 million years ago to 10,000 B.C. The earliest of these people were living in the Ice Age. They were hunters that survived by moving with herds of animals, preying on the animals when they were in need of a meal.

They probably lived in caves or whatever natural shelters that their environments gave them. As a curiosity, and to fight boredom, early man probably played with naturally found clay that lay in the cave floors. Being experienced with building fires, they made fires regularly for warmth. For whatever reason, they are said to have thrown clay figurines into fires.

When wet clay is heated rapidly, the water in the outer clay quickly evaporates, causing the clay to shrink in size. Unfortunately, if the piece is not very thin, the moisture in the interior of the clay begins to turn to steam. This vapor is trapped and, as a result, there is a small violent explosion that releases the water vapor. When this occurred from being heated too rapidly, these early cave artists thought that they had stumbled on some sort of magical power. This then became ritualistic entertainment for them. At some point a piece dried out too long before being tossed into the fire. The boom



they were looking for never happened. The next day after the fire had died the primitive people woke to discovered that their clay had become hard like stone. This was the birth of ceramics. The word ceramics simply means fired clay.

The piece pictured is known as Venus of Dolni Vestonice. The small sculpture was found in 1925 at the base of Devin Mountain in the Czech Republic. Historians believe that this nude female form might have represented a goddess of fertility. The sculpture was found in two pieces. Standing at only 4.4



inches tall, this sculpture carbon dates back 29,000 – 25,000 B.C., making it the oldest known intact piece of fired clay to ever be found.

Early man began to use this process in a multitude of ways. Archeologists have found containers to cook with and eat out of as well as preserve food and carry water. In ancient Mesopotamia, cuneiform script was first developed to inventory grains and other foods that were kept in ceramic

Burial Jar (Guan) Period:  
Neolithic period, Majiayao  
culture

vessels. This system of writing is the first written

records that has been discovered. Ceramic funerary vessels have also been discovered that held ashes and other human remains.

As they discovered more and more about the importance of their new technology, they begin to pass their discoveries on to future generations. They sought out the best locations to dig clay, often preparing clay that would be saved for years to come. They learned the best methods to remove impurities and blend in additives to make the clay stronger. Methods for decorating, drying, and firing also had to be perfected through trial and error. Paleolithic man added ceramics to their growing arsenal of tools and processes that begin to pave the way for early man to be settlers instead of nomads.

## **OUT OF THE GROUND & THEN WHAT?**

Although clay is one of the most abundant resources at our disposal, it does require some thoughtful preparation. Clay, in its natural state, usually has many impurities that could hinder easy production of ceramic forms. Early artists who pulled clay right out of the ground would often first dry it

out. They would then crush it up into smaller pieces that could be sorted out. They would take out sticks, rocks, and other impurities that could be removed by hand. They would then slowly reintroduce water to the clay until they achieved the moisture content they were after. This process was very labor intensive, so many sought for an easier solution. Levigation was the answer to many. With this process, the clay was collected and then immediately immersed in a large container of water. The muddy mixture was stirred up into a thin slurry. The heavy contaminants like rocks, coarse sand, and bones would sink to the bottom. The lighter contaminants like leaves and other vegetation would float to the top. The top would then be poured off. The clay would be left for some time to thicken and then the clay would be removed off the top until the potter reached the heavy contaminants at the bottom.

## **HOW TO SHAPE AND FORM**

The process of becoming a skilled craftsman working with clay takes years to perfect. However, the basic methods of manipulating clay are fairly easy to utilize. These methods will later be subjects of more in-depth study. For now, we will briefly present them. The basic methods that most potters have used and still use



today are as follows:

- Pinching
- Coiling
- Slab building
- Molding
- Wheel throwing

## **Pinching**

The most primitive method is pinching. A potter takes a ball of clay in their



Pinch Vase by Barbra Walsh

hand and then opens up the ball usually by pressing their thumb into it. They then rotate and pinch the piece until it has the shape they desire. The more the piece is pinched, the thinner the pot becomes. This process is very intuitive and has served potters for thousands of years. Small figurines and other non-vessel forms can be pinched out as well. An additive

or subtractive method can be utilized in

conjunction with the pinch process. In the

additive method, pieces of wet clay can be added onto a larger mass to form the desired results. Subtractive is the exact opposite. Clay is slowly removed in desired areas to get desired results. Pinching generally only involves the hands and the clay.

## Coiling

Coiling is believed to be next in the evolution of processes. This process involves the potter rolling out long ropelike cords of clay that can then be made into rings, that can then be



This Nigerian piece features coils and pinched clay.

stacked - one on top of each other. The coils are then blended together, often on the outside and inside but usually at least on the inside of the vessel. The blending of the coils helps hold the vessel together and makes it less porous. The coiling method made



Jomon Potters from ancient Japan used coils as a decorative feature in this piece.

larger and taller vessels much easier to make. Pieces have been made exclusively using coils to create vessels. A potter can even have a coil spiraled around itself to create the bottom of the vessel. Many pieces have been created utilizing pinch as a starting point and the coils added afterwards to achieve more height. Most early food storage and preparation containers utilized these two methods to create beautiful but utilitarian forms.

## Slab Building

Slab building is a bit more complex. With this method, the potter flattens out large sheets of clay. Modern potters use slab rollers or rolling pins to accomplish this task. Clay can also be thrown down on a flat surface at a



slight angle, forcing the clay to spread out. This is much like the way you might have seen someone working pizza dough at a restaurant. These pieces will be cut to shape and then pieced together to form ceramic forms. Often, the slabs of clay are left to stiffen up before being joined together.



Scoring and slipping may be needed to butt these pieces together. Scoring is simply scratching up pieces of clay to be joined together. The concept is that the clay platelets from each side will marry a bit more. After the sides are scored, slip is usually added to further aid in this connective process. Slip is made by mixing clay with water. Slip is a fine, liquid form of clay used with scoring to cement together parts that have



been formed separately. It is very common to score and slip pieces when working with any method. Although, it's probably most common with working with slabs since slabs often have to stiffen up a bit to be strong enough to hold their own weight up. Slab pottery has a distinctive look. It is often more angular than pinch and coil pots which generally have an organic, rounded look.

The work of Scott Dooley is made of slabs that have been rolled into tubes and then pieced together.

## Molding

Molding is made possible by the use of another form that the clay will be pressed in or on. Most likely, in the past, clay was pressed into woven baskets. After the clay dried, the loss of moisture would cause the shape to shrink and separate from the sides of the basket. The clay, now shaped like a pot, was removed, and, when dried in the sun on hot sand, it retained the basket pattern. Early potters also used objects like gourds or rocks to drape clay on just long enough to stiffen a little. Modern ceramics use commercial molds to pour clay slips into making all kinds of forms. With this process, the entire cavity of the mold is filled with slip. After just a few moments, the plaster in the mold begins to dry out the slip that is in contact



with the mold. The slip that is not in contact with the mold is simply poured out to form the void in the inside of the form. The whole piece is given more time to stiffen. After some time, the vessel

can be removed from the form.

Drape Mold Bowl by Susan Goldstein

## The Wheel



Many think of the potter's wheel when they hear the words pottery or ceramics. Often we joke about the movie Ghost's scene that depicts a couple at a wheel sensually making a piece. **So when and where did the potter's wheel get its start?** The story probably begins in the Middle East around 4000 BC (6000 BP). The village settlements were growing in size and prosperity. A new phase in man's development was happening. In what is today southern Iraq, or ancient Mesopotamia, the



Potter's wheel of Early Indus Valley Potters.

first urban civilization was being created; villages grew into towns and then towns into the great city states: Ur, Uruk, Ubaid, Eridu, Lagesh etc. By 3000 BC, the people of these cities, the

Sumerians, had already established a sophisticated trading commercial culture.

This was the first town and city based civilization on this planet. New crafts and occupations evolved. More skills and tools were invented to keep up with growing demands. Occupational specialization was a new concept. Instead of everyone doing the same tasks, people began to take on specific jobs that they were more suited to do. Most of these changes affected the work and life style of the men much more than women. Most women were already almost fully occupied and specializing in the vital task of bearing and rearing children. Any other tasks done by the women must therefore have been part-time and close to the home. Women almost certainly developed the

techniques of sewing, weaving and basket making in most prehistoric communities.

The women were probably also the first real potters - the makers of bowls, dishes, jugs etc., so it is not surprising that in these early village societies building a basket and coiling a pot had a lot in common. The first potter's wheels were simply turntables to aid potters who were making coiled vessels. With the advent of the potter's wheel, more men seemed to take more of an interest in working with clay. Societies were becoming more advanced and technology was beginning to make jobs more simple, less labor intensive and closer to home. The established division of labor for men and women were changing.

## **SURFACE DECORATION**

As you grow as an artist, you will begin to become more familiar with different art lingo. Two terms that are often used interchangeably are form and shape. **Shape** is technically the path of a line that delineates itself from the area around it by enclosing a space, the boundaries of which are delineated by other elements of art (i.e.: lines, colors, values, textures). Shape is most always used in reference to a two dimensional piece. On the other hand, **form** refers to shapes that have an actual or implied third dimension giving them the addition or illusion of depth.

The vessel form provides its creator with a three dimensional canvas that can be used to further express themselves. Potters often leave their forms unadulterated to bring emphasis to the form itself. However, others prefer to get creative with even the surface of the vessel. There are many different techniques that can render different surface textures to the body of a piece.

One of the oldest techniques is burnishing. **Burnish** is using a smooth object like a river rock or the back of a spoon to polish the surface of leather-hard clay. The process leaves the clay less porous and more impervious to water. This makes the piece easier to clean by pressing the clay particles closer together. Burnishing makes it less likely to grow bacteria, mold and mildew. Ancient potters found burnishing to be a valuable process.



Incising is another method for adding visual elements to the surface of a piece of ceramics. **Incising** is simply engraving a decoration into unfired clay with the use of a sharp tool. This is still a very common practice with potters all around the world.

There are no limits to the type designs that a potter could do with incising.

Combing is very similar to incising in that you are using an implement to mark the surface. **Combing** marks the surface with uniform lines by dragging a comb or other object across the surface.





**Impressing** involves the use of a stamp of some sort to press a texture into the surface of clay. The potter presses an object with an interesting texture into the clay and then gently pulls it away to reveal an impression of that shape in the clay.

There are numerous commercial stamps with a wide variety of subject matter made for potters today.



## GLAZING

Early potters needed to find a way to make smoother surfaces that were more water tight. Simply firing clay doesn't make it resist water. If you fill a fired container with water it will eventually seep through the vessel. Glaze is a thin coat of glass that fuses to the surface of the clay. It offers a water barrier as well as giving the vessel a color or texture determined by the formulation of the glaze. There are glazes made to fuse to the surface of fired clay at various temperatures. The earliest glazes date back 8000 – 5000 B.C.

Just like any of the other advancements made in ceramics, glazing was a process of trial and error. Many successful glazes were kept secret. Even today, when a potter creates a unique glaze, the recipe is kept secret. Most glazes are simply raw materials, silica, alumina, and various colorants that are crushed to powder, then suspended in water, and then painted on the once fired pottery. The piece is then fired once again to allow the materials to melt and fuse to the surface.



Ancient Egyptian glazed pottery

There are four different glazes that were used in ancient ceramics. Alkaline glazes are first recorded around 4000 BC in the Middle East. **Alkaline glaze** is a simple mixture of sand and ashes from burnt plants. The mixture worked as a simple glaze that would fuse to ceramics surfaces

leaving a smooth, somewhat transparent surface. Potters would use underglazes made with various oxides and pigments prior to glazing.

In Asia, ashes from plants were mixed with feldspar minerals to create ash glazes. These glazes were thin and only slightly altered the texture of the piece. However, the glaze was hard and offered a very good water barrier. This method of firing was only common in China, Japan, Korea, and Thailand. However, this technology was revealed to westerners around the 1700's when the far east began to have more contact with the outside world.



Early Islamic Pottery with Lead Glaze

Lead glazes are now considered unsafe because of their carcinogenic effect.

Lead is naturally found in low levels in most clay bodies. In some areas, it is much more prevalent in the clay. In these clay bodies, the clay seems to almost glaze itself. Islamic potters explored this happening and attributed the glazing effect to materials high in lead. They later discovered that by adding tin oxide, the glaze would fire to a nice white.

In the twelfth century, German potters were exploring ways to achieve the high temperature firings that Asian potters were achieving with their porcelain firings. For whatever reason, someone, as a curiosity, threw salt into a kiln load of pottery as it was just starting to

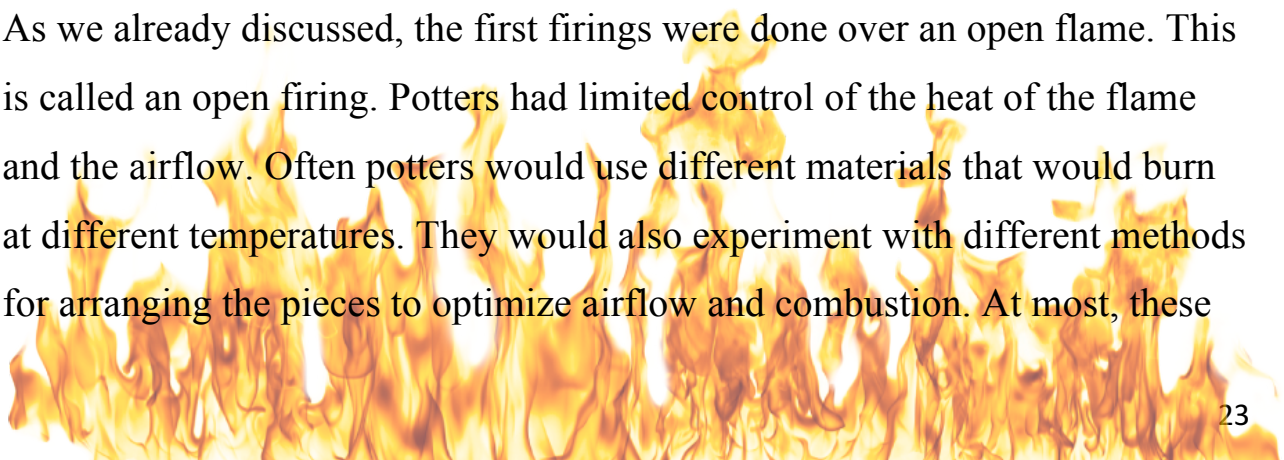


Salt fired pottery by Chris Baskin

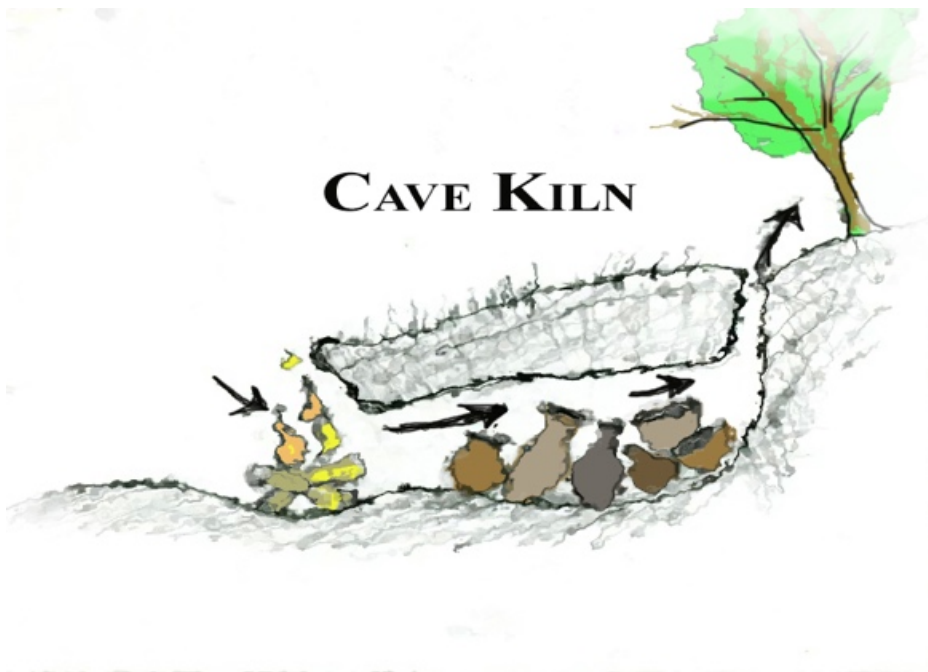
have a dull red molten look that happens at about 1000°. As a result, the instantly vaporized salt bonded with the silica in the clay to form a hard, durable glaze. This process has been refined and is still used for effect today.

## FIRING

Even though there are several glaze options out there, the glaze is irrelevant if the piece is not able to be fired. The definition of **ceramics** is products made from fired clay. So the firing of the clay is vital to the process. As we already discussed, the first firings were done over an open flame. This is called an open firing. Potters had limited control of the heat of the flame and the airflow. Often potters would use different materials that would burn at different temperatures. They would also experiment with different methods for arranging the pieces to optimize airflow and combustion. At most, these



pieces were fired to 500° to 800°. This is very low compared to temperatures that modern potters fire their pieces. Potters soon begin to notice pieces with varying characteristics dependent on where in the fire the piece was placed, if the piece had more pieces covering it, and how much airflow it had. It wasn't long before potters begin to attempt to control the amount of airflow that their firings had.



### **The Kiln**

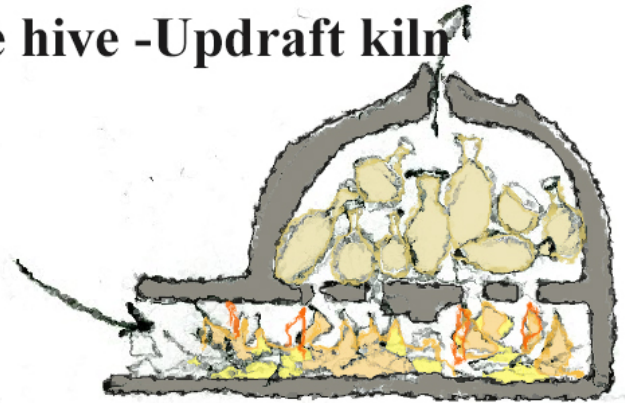
This led to the birth of the kiln. A **kiln** is a furnace designed to fire ceramic products. The earliest kilns were build right out

of the earth. A cave kiln was very common. This type of kiln was simply a small cave dug out of a bank of a river or stream that vented out a hole dug from the top. A fire would be continually fed at its lower opening. Air would be pulled in there by the fire and exit at the top.



Later the beehive style kiln was developed. This design would use a geodesic dome made of clay to cover the pottery. A fire chamber or fire box would be located directly under the pottery. The air flow was similar in this type of kiln except that the size of the opening could be controlled a bit

### Bee hive -Updraft kiln



easier. Early potters learned that if they had better control of the airflow in a firing, they could be more economical with their fuel sources and, at the same

time, have better control over the final

product. Most of the early kilns in

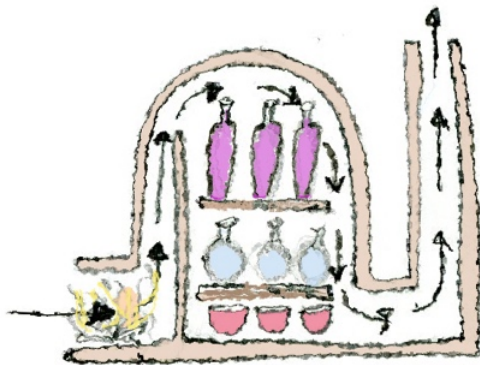
Ancient Greek, Roman, and

Mediterranean societies were updraft

kilns. This means that the fumes coming

off the fire exit upward out of the kiln.

This is the simpler and obvious way to



Updraft Kiln

create a kiln since smoke rises upward. Potters in China and Japan were a bit more innovative with their designs. They constructed kilns that forced the airflow in the and out of the bottom. The tops were completely sealed off this made even greater use of the fuel. These new kilns that could be more precisely fired. These new kilns, coupled with new innovations in glaze technology, allowed for a wider range of colors and textures. Today, there are hundreds of different makers of kilns that are commercially made for potters and ceramic artists. They come in a variety of different sizes and shapes.

Kilns are usually classified by their power source. The three most common kilns are wood burning, gas, and electric. The most common of those would have to be electric. Electric kilns are the most economical and have a much smaller footprint on the environment.

From early man's beginning, we humans have tapped into this incredibly abundant resource. We learned to process it, and then manipulate it into desired forms. Mankind has discovered that different clay bodies have different strengths and characteristics. Mankind has stumbled upon firing clay to harden it into a permanent shape that can serve a multitude of purposes. We have built on the knowledge of our ancestors from all over the world, borrowing from different successes and advancements. Clay has not only served mankind in a utilitarian sense, but it has also served a vehicle of self expression. It has provided mankind the opportunity to shape and craft something to his/her liking. It has given our minds exercise in materializing a mental image into a three dimensional material. The relationship that mankind has with this mystical, primitive material is just as timeless as it is momentary and it pierces to the core of who we are and where we have come from.



# CHAPTER 1 REVIEW

1. What is ceramics?
2. What are some modern uses for ceramics?
3. When do the oldest discovered bricks date back to? Where were they found?
4. How is clay formed?
5. What is the chemical formula for clay?
6. What are some different types of clay and how are they different from each other?
7. What is the oldest piece of intact fired clay to have ever been found? Where was it found? When does it date back to?
8. How did early artists process naturally found clay to prepare it to work with?
9. What are five basic methods for creating pieces out of clay?
10. Give a brief explanation of Pinching, Coiling, and Slab building. What do they have in common? How are they different?
11. When and where did the potter's wheel get its start?

12. Were men or women the first potters? Explain your answer.
13. What is the difference in shape and form?
14. What is burnishing?
15. What is Incising?
16. How is incising and combing different?
17. What is a glaze? When do the earliest glazes date back to?
18. Name and briefly describe four different type glazes.
19. What is a kiln?
20. How has clay served man as a vehicle for self expression.



**CHAPTER 2**

**GETTING TO KNOW THE  
CLAY**

# GETTING TO KNOW THE CLAY

While working with clay you will become very familiar with the material and the unique characteristics that can differ clay body to clay body. With time and patience, you will develop your own personal aesthetic. You will learn what to look for in a clay body when doing a specific task. Working with clay can be very rewarding and therapeutic in many ways. However, to stay in the game, it's important to exercise good safety while working with clay. It's all fun and games until someone gets hurt.

## CLAY CHARACTERISTICS

Whether you are using preprocessed clay or tailor making your own clay from raw materials you will notice that different clay bodies have different characteristics. The five basic

characteristics to look at when evaluating a clay body are Shrinkage, texture, color, moisture and plasticity. Some clay's characteristics leave them better suited for hand building or sculpture while some are better for wheel throwing. Various clays

also fire differently. Some stoneware can be fired to very high temperatures around 2300 degrees resulting in a very solid, durable, and dense body.

Earthenware clays can only be fired to around 2100 degrees. The end product may be more colorful but it wont have the durability of the

### CHARACTERISTICS OF CLAY

Shrinkage  
Texture  
Color  
Moisture  
Plasticity

stoneware. Basically the more organic matter that is present in the clay the lower the firing capacity of the clay. The trade off for a clay that has limited firing range is that it is often more plastic. **Plasticity** is the property of clay that allows it to be shaped and formed without tearing or breaking. Also, clay bodies like earthenware often have a wider range of colors that occur naturally in the clay.



Successful potters and ceramic artists take time to get to know a new clay body. Understanding the material that you are working with can make a big difference in the final product. Artist, Oliver Van Herpt is creating beautiful ceramics pieces using a 3D printer that is able to work with clay. Obviously, he has a very specific clay body that is able to hold such a large form and yet yield itself to be formed by such sensitive and precise instrumentation.

## SHRINKAGE

From the moment that a completed form is placed on the shelf and left unattended the clay begins to dry. While clay is drying water evaporates out of the clay leaving only silica, alumina, and whatever organic matter may be present. As a result, the clay shrinks in weight and size. **Shrinkage** is the



This image shows a mug that has dried, a bisque fired piece, and a mug that has been glazed and fired again.

reduction in size of the clay mass that occurs when water evaporates from the clay during drying and firing. Dry shrinkage refers to the percentage

the clay will shrink from wet clay to drying. You can test

the shrinkage by rolling out a small tile and then measuring it while it is wet. Then simply re-measure when it is dry or after it has been fired. With some simple math you can find the shrink rate of your particular clay. Most Earthenware clay will shrink 6-8 percent while most stoneware has a shrink rate of 11-15 percent depending on what temperature it is fired to. Being aware of the shrinkage that your clay will undergo can help to appropriately size your creations. The larger the piece the more evident the shrinkage. For instance, a 36" tall vase can shrink up to 5.5 inches. Considering that many mugs and bowls are not even that tall its quiet obvious that the larger piece will have more noticeable shrinkage.



## TEXTURE

The texture can vary greatly from clay body to clay body. A smooth textured



This photo shows grog being wedged into a clay body.

clay is more suitable for throwing small pieces, making beads, and doing precise work. Course textured clay is better suited for larger applications where small details are not needed. Also many of the additives that make clay

bodies course also give the clay a great deal of strength and at the same time reduce the shrinkage rate. Many potters deliberately add additives like



sand or grog to their clay. **Grog** is fired clay that has been ground down into tiny particles. Pieces that have grog mixed into the clay don't shrink as much because the grog itself has already previously shrunk. Although this reduced shrinkage sounds enticing, grog is not for every clay body. A classically shaped teapot would look

strange with a course clay body. The texture of the clay can totally change the way light moves across its surface. A mature and experienced potter knows what clay texture is appropriate for what project. Compare and contrast the two pictured hand thrown pieces. The choice of clay plays just as much a part of the design as the form



## COLOR

Clay comes in many shades. As you discovered last chapter clay is



most pure closest to it's parent source. This parent source is the sight where the clay initially eroded from exposed igneous rock. A **primary clay** is a clay that has the same



This photo shows a limited variety of stoneware color.

composition as its parent source. Porcelain is an example of primary clay. It is very pure and contains very little impurities making the clay have very little color. Most natural porcelains are white. Porcelain pieces are very expensive because porcelain is so hard to work with. However, because of the purity a porcelain piece can be translucent when held up to light. Unlike primary clays stoneware do sometimes have a bit of color. Stoneware which has traveled further way from the parent source may have low levels of other impurities giving them a range of lighter colors. If you are looking for a clay with dark rich colors, you will need to look at earthenware clays. Earthenware clay comes in a variety of colors due to the addition of generous amounts of various other additives like iron, tin, and other metals and oxides. Earthenware also contains varying amounts of organic matter that color the clay as well. Many clay formulas mix stoneware and earthenware to add some color or desired texture while maintaining the strength that comes with being able to fire clay at high temperatures.

## MOISTURE

Another characteristic of clay that is worth mentioning is moisture. Moisture is very much related to shrinkage in that as water evaporates it reduces in size. In addition to that the moisture content can be a factor that dictates other attributes of your clay body. The degree of moisture in a clay body is to some degree a preference that changes from person to person. It is often



Baily Pugmill

a compromise in having a clay that isn't too hard or too soft to do the job. For this reason, many professional studio potters prefer to pug their own clay. A

**pugmill** is a large mixer that is designed to mix dried clay with water and other amendments like sand or grog. There are many companies that mix clay and prepackage it for consumer purchase. I'm sure they are constantly getting customer feedback on the moisture content of their clay. Potters working at a wheel generally want clay that is soft or moist enough to center on the wheel without having to exert excessive force. However, if the clay is too moist it won't hold the shape it is put into. Artists working with slabs may want clay that is a bit stiffer so that it can support its own weight when oriented into vertical forms. There are

definitely limitations to what can be done with clay at various moisture levels but there is also a degree of preference too.

## **PLASTICITY**

The last characteristic to take into account is plasticity. This characteristic is also partially determined by moisture. However, there are two other factors that determine a clays plasticity. **Plasticity** is the property of clay that allows it to be shaped and formed without tearing or breaking. The size of the clay particles is the first variable in plasticity. The smaller the particles the more plastic the clay becomes. The larger the particles the easier the clay breaks when stressed. The second factor is as already mentioned, the moisture content. The more moisture the easier the clay can be shaped. However, for clay to have an ideal plasticity it should not only be easily shaped, but also needs to be able to hold that form. Therefore, too much moisture can ruin the plasticity of a clay. The last factor that determines a clays plasticity is organic material. As organisms and plant life living in our environment breakdown long after they have been alive they mix in with soils and clays. This organic matter often greatly improves the plasticity of clay bodies.

A simple test can be preformed to determine the plasticity of a piece of clay. The steps are outlined below.

1. Get an orange sized ball of clay.  
You will also need a canvas or some sort of cloth to put on your table or hard flat work surface.



2. Quickly roll out a thick coil. If you spend too much time trying to make it perfect it will dry out from your hands and the cloth. Drying out the clay would give you inaccurate results.



3. Cut your coil off at one foot.



4. Now take the coil that you have made and form it into a ring.



5. The last step is to hold the ring up vertically from the bottom.



A clay body that has a good plasticity will roll into the coil with little resistance. You will be able to make a ring without the coil cracking. Some clays may crack completely in half. Those clays would not be examples of clay that are plastic. The last thing to look at would be to check that the clay is not so plastic that it does not hold its own form after being put into a ring. A clay that can be easily shaped but cannot retain that shape is of little value. Its remarkable how clay has the capacity to be formed, molded, coiled, or spun into a beautiful vessel but then is strong enough to retain that shape. Taking a chance that a clay is suitable for throwing a large piece can result in tragedy when the piece collapses or cracks to pieces as it dries. It's important to know that you are working with a material that you can trust to hold up against the demands you will be throwing at it.



## PREPARING CLAY FOR USE

Wedging is a process that de-airs and thoroughly mixes the clay for an even consistency. There are several methods for wedging the clay. The

1. Gather your materials. You will need the clay of course, a wire tool, and a cloth or canvas to keep the clay from sticking to the table.
2. Cut off a piece of clay that you feel is appropriate for the project you are pursuing. It is hard to wedge a piece that is too small or too large.

As you learn to wedge clay you will learn how much is appropriate for your hands.

3. Ball up the clay in such a way that it doesn't enclose air pockets in the clay.
4. With your arms straight press down on the clay at a 45 degree angle away from you toward the side of the clay you cant see.
5. Grab ahold of the clay as it begins to flatten out going forward.
6. Lift up the now flattened side of the clay so that it is parallel to you vertically.
7. Now press back into the clay at a 45 degree angle downward and forward. This process will feel awkward at first. Watching an



experienced potter wedge will shed light into the process. Repeat steps 4-7 until the clay begins to have less resistance.

8. The finished wedged clay has a face made by the clay folding itself over and over again.

If you notice that the clay is too soft continue wedging a bit. The process will take out some excess moisture. If the clay is too dry you can cut layers of clay that is moist and then sandwich alternate them together. You will then have to wedge again.

## **AFTER YOU ARE ALL DONE**



After you have prepared your clay and then have made a masterpiece you will find that you probably have more clay left over. It is common to see beginners take a good bit more than they need and then make a mess and leave it for others that

use the same space to clean. It is very important to understand that clay can be recycled. In most ceramics classrooms there is a scrap bucket or sometimes several. Clay can be slaked or soaked in water and then mixed with dryer clay in a pugmill. Commercially prepared clays are very expensive it would be a shame to throw away material and money. Keep clay out of the sink. Inexperienced potters might think its wise to clean up by trying to



wash clay down the sink. The heavier particles in the clay will build up over time clogging a drain. Try to minimize how much clay goes down the drain. Many art classes and ceramic studios are equipped with traps to capture this clay that does go down the drain. If you have ever had to clean one of these traps out, you will know that it is not a fun job. They stink so bad. It's not a job for someone with a weak stomach. Therefore, the conscientious thing to do is to not put clay in a sink.



con·sci·en·tious

,kän(t)SHē'en(t)SHəs

adjective: **conscientious** - wishing to do what is right, especially to do one's work or duty well and thoroughly.

## CLAY EVERY DAY KEEPS THE DOCTOR AWAY

Clay is a great therapeutic material. Working with clay can be a great stress reliever. Many first timers find it somewhat addicting and can become consumed with projects. Often, we don't have a kinesthetic connection to materials or process in an occupational sense. Many people in this technology driven era sit in front of computer monitors in cubical farms and have no physical stimuli. Clay is a great remedy to many of the stresses we face today.



Clay is a therapist in many senses. For instance, throwing a pot on the wheel can be so mesmerizing, even for the potter himself. You may find yourself thinking about nothing but the connection you are having with the material and how it responds to your actions. The clay records your each and every decision. It does not complain or lecture you on what you are doing wrong. The end result may be good or bad but it's exactly what you made it.

Have you ever met an elderly person who still loves to do projects and physically demanding chores? If you've ever wondered why they still keep going and what is their driving force you are not alone. There is a great sense of pride in completing a task and doing it well. In addition to that, your body releases endorphins when you are in motion and at work. Thus, making you feel good. The same thing happens while working with clay. Bridges to Healthcare a mental healthcare group published an online article called, [Neuroscience Could Explain Why Pottery Is Good for Depression](#), here is an excerpt, "The therapeutic potential of pottery for depression is increasingly being recognized by the mental health community. But how and why does it work? From the effort-driven reward circuit theory that extolls the benefits of manual labor to theories focusing on the biological impact of self-expression, researchers are looking for answers. What ultimately matters, however, is that people are getting better, which is why Bridges to Recovery integrates pottery in depression treatment." Neuroscientist Dr. Kelly Lambert puts it this way. "In our contemporary age, when it's possible to Tweet one's deepest thoughts while waiting two minutes for dinner to warm in the microwave, this circuitry—encompassing a vast amount of 'brain real estate'—isn't often called on to function in coordination and communication, as it seems evolutionarily designed to do. But when we activate our own effort-driven reward circuitry, it squirts a cocktail of feel-

good neurotransmitters, including dopamine, endorphins, and serotonin.”

Famous potter, Mississippian George Ohr once said, “When I found the

potter’s wheel I felt it all over, like a wild duck in water,”. The connection

man has with this material is

hardwired through millions of years

of evolution. Neglecting to

experience the clay may have

consequences that we have yet to discover.



## **OH WAIT, MAYBE CLAY WONT KEEP THE DOCTOR AWAY.**

There are many health risks that one working with clay should be made aware of. Most of the risks are associated with breathing airborne dust from clay, glazes and other ceramic related materials. Other risks to consider are injuries acquired from repetitive movements using bad ergonomics and poor positioning.

Regardless of whether you are a ceramics teacher in a large art department or just a small time hobbyist, there are a few safety precautions that could make a large difference in your health if not implemented.

Air quality is one of the main concerns that a potter or ceramic artist should



give attention to. Clay is relatively safe when wet. But as it dries, it becomes much more dangerous to those who have repeated exposure to it. Clay dust contains silica particles that are very small and since they are so light they can easily stay airborne for days. Breathing in these particles over long periods of time work havoc on the lungs. Your body does not have an effective way to rid these particles from the lungs. They act as an irritant for years to come. They also diminish your lungs ability to properly pull oxygen from the air as they were intended. With long and repeated exposure to breathing clay dust an individual risks having Chronic Bronchitis as well as Silicosis. Acute Silicosis can result in calcifications of parts of the lungs greatly decreasing the functionality of the lungs.

Fortunately, there are several things that can be done to avoid this disease. Keeping your workspace clean is the first line of defense. Any clay scraps no matter how small should be put into a bucket with water to keep them hydrated and unable to cause dust. Clay should be kept off of the floor. Most of the dust in a ceramics workspace initially comes off of the floor. Pieces of clay usually fall on the floor and then are crushed into tiny particles as they are walked on. This dust becomes airborne and then is

breathed in. If it never falls on the floor in the first place the chance of having clay dust in the air is greatly diminished. Ceramics workspaces should be daily carefully swept in such a way that the dust is not kicked up into the air. It is very helpful to have the area mopped at least once a week. Some studios are outfitted with a drain in the center of the room allowing the room to be hosed down. This type setup is very helpful in keeping dust to a minimum. Other precautions that should be followed are running a HEPA (High Efficiency Particulate Arrestance) filter that can filter out as small as 0.3-micron (0.000012-inch) particles. This can greatly reduce the volume of airborne dust in a space.

Ergonomics is also worthy of some consideration. Often people suffer from injuries that are the result of repeated movements that are not good for certain height, size, and body type. Although the world can't be tailor made for each person individually, there are some things that can be done to improve the ergonomics from person to person.

er·go·nom·ics

ˌɜrɡəˈnämiks/

noun: **ergonomics**- the study of people's efficiency in their working environment.



Little things can make a big difference in exercising good ergonomics. For instance, it's important to have a workspace that is the appropriate height. In a classroom setting where all the tables are the same height it may be helpful for one to stand on a book or a small stool if they are too short for the table to be at a comfortable working height. On the other hand, if one is too tall for the workspace the worker may want to elevate the project on top of the table to avoid slumping over for long periods of time. Commonly

used equipment and storage areas may want to be elevated to eliminate users from having to often bend down. Stools at a range of heights may help to accommodate tall and shorter people. When it comes to a repetitive action like throwing on a wheel or wedging clay. It is important that your movements are not painful and that you are maintaining good posture through the process. This can save your joints from unneeded wear and tear, lessening the likely hood of arthritis in the future. For better ergonomics the potter pictured here could have elevated the wheel to not have to bend over awkwardly.

## TOOLS

The hand is the most valuable tool for the artist. Because the hands are in direct contact with the brain they are quiet capable to completing a myriad of different tasks. As a student of ceramics your teacher may require you to complete several projects using only your hands. This is in an effort to make you less dependent of other tools and more confident with your own tools, your hands. However, as you grow as an artist and your pieces become more sophisticated, you may expand your capabilities with the use of other tools. There are many commercially made pottery tools that can better and more efficiently complete several tasks. Potters have a long history of problem solving often making their own tools. Today, we will take a look at an inventory of several of the more common tools that you may find helpful as a potter and ceramic artist.



1. Stamps can be a great way to add interesting textures to your pieces. Many potters make or have made special signature stamps that easily sign pieces.
2. A paddle that can flatten out areas of a piece can be of use when shaping large areas of clay. This one has a nylon sock over the end so that it doesn't stick to the clay.
3. Brushes of various sizes and shapes are useful when glazing, painting on slip when joining pieces and when smoothing out areas of clay.
4. A needle tool is one of the most often used tools you will use while working in clay. This needle tool made by Sherril Mud Tools is called a Mud Shark. It doubles as a needle tool and a plastic rib.
5. Wood ribs are mainly used by potters working on the potter's wheel to shave off or shape excess clay as the wheel spins. The name rib comes from the fact that early potters used animal ribs to perform this same function.
6. Rubber or plastic ribs can be shaped in the hand as they are applied to the clay surface allowing its user the flexibility to custom contour the silhouette of their pieces.
7. Metal ribs are great for scraping off the soft slurry of clay on the outer surface. They are also great for compressing the bottoms of bowls and plates.
8. Glazing tongs are designed to allow it's user the ability to maintain control of a bisque piece of ceramics while submerging it in glaze.



9. Calipers are designed to make precise measurements in situations where you need to know the relationship of two pieces. For instance, calipers are handy when you are making a top to a teapot.
10. A bump tool is a tool that is designed to shape closed forms by pushing outward from the inside. It is very useful for longneck vases with a small opening.
11. A wire tool is a very commonly used tool to cut clay from a large piece in preparation for making a piece. Also a wire tool is needed when when you are cutting a vessel off of the head of a potter's wheel.
12. A shredder can be helpful when you are wanting to file down a specific area of a



piece. Works the same way as a cheese shredder but is rounded to allow you to file more specific areas.

13. Trim tools of various sizes and shapes are useful when

trimming the bottom of a wheel thrown piece. Trim tools can also be helpful when sculpting clay using a subtractive method.

14. A couple buckets are valuable for keeping clay scraps hydrated that can be processed for later use. Also, a bucket with a lid is a great container to use to store clay while keeping it from drying out. A third bucket is needed for holding water that you will use while throwing on the wheel.

15. Sponges are often used when working with clay. Both hand building and wheel throwing has many applications where sponges are very useful.
16. A banding wheel is a great tool for quickly turning a piece to allow easy access to all sides. Artist find this useful when they are glazing and performing other surface decorations.
17. A potter's wheel is one of the single most important pieces for the potter. There are many commercially made wheels that range in size and clay turning capacity.
18. A good apron made with split legs for straddling a potter's wheel is a great way to keep clean when working with clay.



You may find it helpful to find a toolbox or other type container that you can put all of your tools in. This toolbox had legs put on it to raise it up a bit making it easier to reach tools when throwing on the wheel. Anything you can do to improve the ergonomics of an activity that you do

over and over will have lasting benefits.

## COMPOSITIONAL TOOLS

As an artist your goal shouldn't just be to make pieces that have a utilitarian purpose. Utilitarian is a regard for utility or usefulness. One of the most important goals of an artist working in any medium should be to create pieces that have a beautiful or pleasing aesthetic. Artist create compositions with various mediums. A composition is the placement or arrangement of visual elements or ingredients in a work of art. The elements of art are more or less the conceptual tools that an

artist has in his arsenal to make compositions. Here is a brief overview of many of the common elements.

**Line**- the path of a moving point. The most obvious line in a ceramic piece is the profile of a piece. Also, lines can be integrated in the surface of a piece in the glazing or throwing marks made by a potter's wheel. Lines can be thick or thin, wavy, curving.



**Shape** - is an enclosed space, the boundaries of which are defined by another element of art. Shapes can be geometric or organic. The silhouette of an object is the first shape that we recognize.



Secondly, the artist or viewer observes the shapes of objects within the composition such as subordinate parts like handles, bases, lids and other parts that belong to the whole. Shapes can also breakup or pull together the visual flow of a piece.

**Form**- refers to the whole of a piece's visible elements *and* the way those

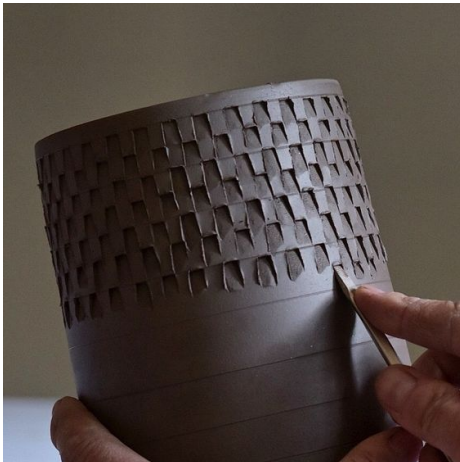


elements are united in three dimensions. Height, width and depth.

Form is the element in three dimensional medias that is the support or foundation for all the other elements that will be integrated into the composition. Form is basically the overall shape of a piece. Many Potters and Ceramic artists are most conscious of

their forms, without the form you have nothing but unoccupied space

**Value** – refers to the range of dark to light in colors or tones. Various clays are different colors. For the most part the value of a piece will be determined by the glaze choice as well as the way the way shadows wrap around the form.



**Texture** - refers to the surface quality in a work of art. We associate textures with the way that things look and feel. Everything has some type of texture. The texture may be literal in that it can actually be felt or may just be a visual texture We describe things as being rough, smooth, silky, shiny, fuzzy and so on. Some things feel just as they appear; this

is called **real or actual texture**. Some things look like they are rough but are actually smooth. Texture that is created to look like something it is not, is called **visual or implied texture**.

## DEVELOPING AN EYE FOR AESTHETICS

Aesthetics is the branch of philosophy and subject of study in art that deals with issues of beauty such as what is to be considered beautiful and what is considered art.

Aesthetics can vary from person to person. Each and every person has his or her own opinions often they are strong. Most mature artists have a range of styles and looks that they have an appreciation for. Many academics who study art feel that their view of reality and their personal opinions are more valid than the next.

There are people who think that the main purpose of art is to give a critique. As a result, they are constantly critiquing the work of others even when they haven't created any of their own. It will eventually effect a person's outlook if they only look at art with the intent purpose of finding something that they don't like about it to point out.

It takes a lot of bravery to decide that you are going to try to express yourself in a strange or new medium. Learning a new language can be very difficult and even intimidating. The same can be said of learning to express yourself in a new medium. Honestly, its sometimes scary expressing your thoughts, feelings, and emotions even in your native tongue. There is always a fear that you may suffer some rejection. As a result, many would be artists are discouraged from creating anything that might be near and dear to them. Famous Cubist Artist, Pablo Picasso once said, "All children are artists. The problem is how to remain an artist once he grows up." Picasso was wise enough to realize that children usually don't have a fear of communicating what's on their mind, and what is in their heart. Unfortunately, as a child grows up and experiences the rejection of what they hold in their inner sanctum, they become Jaded to freely expressing themselves.

The great painter Paul Cezanne once said, "Don't be a critic, but paint, there lies salvation." learning to appreciate art for what it is without picking it apart is a very liberating experience. Who knows, there may be some artistry in the way people view the world around them, some people live happy lives despite their situations. Maybe they are better at exercising their artistry in viewing what's around them. The bottom line is that we should make every effort to build up instead of tearing down. We should encourage instead of discourage.

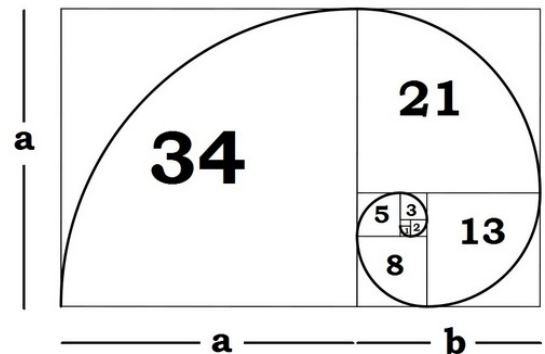
Unfortunately, we know our art will be judged we might as well take some time to look at some commonly held beliefs about aesthetics, what is and what isn't beautiful in the eyes of the masses. It's important to make art that resonates with you the creator but also to consider the audience you will have. The ultimate goal of a ceramics piece should be to balance beauty of form with function. Keep in mind the function could be aesthetic value alone. In that case the art is for arts sake alone. But if you are creating utilitarian vessels form and function must make compromises with each other in order to have a successful piece. Fortunately, function often works well with beauty, take the human form for example. It has been precisely engineered to work as it does and does so with great beauty.

There are several easy concepts to understand that if implemented in your work can give you a leg up in creating a beautiful form that is pleasing to the eye. The following are concepts that can greatly improve the look of your vessels.

### The Golden Mean

The Golden ratio is a special number found by dividing a line into two parts so that the longer part divided by the smaller part is also equal to the whole length divided by the longer part. It is often symbolized using phi, after the 21st letter of the Greek alphabet. In an equation form, it looks like this:  $a/b = (a+b)/a = 1.6180339887498948420 \dots$

The idea is simply to have a division of space that is pleasing to the eye. An experienced artist is aware of proportions and utilizes them to aid in making more aesthetic shaped vessels. The Golden Mean is a ratio



for proportioning space that has been used for hundreds of years in many mediums. A crude and more simplified idea of this golden mean is simply using the thirds rule. A potter can shape his or her vessels utilizing the rule of thirds or the golden mean as the locations for the narrowest or widest areas of the piece are presented.

## THE PRINCIPLES OF DESIGN

The principles of design describe the ways that an artist use the elements of art in a work of art. Balance is the distribution of the visual weight of objects, colors, texture, and space. You might think of it as the principles being your goal to achieve an aesthetic piece, while your elements are your tools that you have at your disposal to work with. Balance is evenly weighting the elements making the design seem stable.

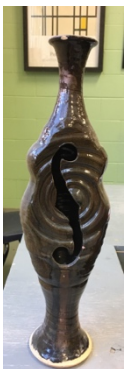
There are two main types of balance. In symmetrical balance, the elements used on



one side of the design are similar to those on the other side; in asymmetrical balance, the sides are different but still look balanced. In radial balance, the elements are arranged around a central point and may be similar.

Which of these photos (to the left and right) do you think

is an example of symmetrical balance and which is asymmetrical balance?



Emphasis is the part of the design that catches the viewer's attention. Usually the artist will make one area stand out by contrasting it with other areas. The area should be a focal anchor but not so distracting from the rest of the composition that it hinders the viewer from noticing other areas of the composition.

The area could be different in size, color, texture, shape, etc. The piece on the left

has emphasis created by a design cut out from the surface of the clay. So your eyes are drawn to the shape made by the void left in the clay. The image to the right is an obvious example of emphasis being made by a black dot surrounded by a red glaze.



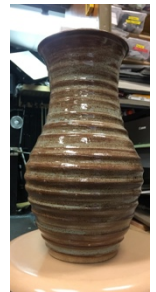




Movement is the path the viewer's eye takes through the work of art, often this path can vary from viewer to viewer. Such movement can be directed along lines, edges, shape, and color within the work of art. The most obvious movement is the profile of the form itself. There is a line that is created by the contrast between the form and its surroundings.

Handles, spouts, lips, feet, and other parts of vessels also create movement in a piece.

Pattern is the repeating of an object or symbol all over the work of art. Repetition works with pattern to make the work of art seem active. Here the the throwing marks make a repetitive line pattern up and down the vessel. The repetition of elements of design creates unity within the work of art.



Proportion is the feeling of unity created when all parts (sizes, amounts, or number) relate well with each other.



Rhythm is created when one or more elements of design are used repeatedly to create a feeling of organized movement. Rhythm creates a mood like music or dancing. To keep rhythm exciting and active, variety is essential.

Variety is the use of several elements of design to hold the viewer's attention and to guide the viewer's eye through and around the work of art.

Unity is the feeling of harmony between all parts of the work of art, which creates sense of completeness.

## CREATING SUSPENSE

Ultimately the goal of your composition should be to grab your viewer's attention and then to maintain it. Maintaining your viewer's attention is much more of a challenge. Captivating your audience can be accomplished through creating dissonance. When the viewer feels satisfied and comfortable with what they are seeing their attention is quickly averted. People are creatures who like things evenly divided, organized, labeled, and neat and orderly. When a piece of art fits this criteria we are quickly satisfied and comfortable with what we are seeing. We quickly look away to see other things and explore the world around us. However, when there are two or more conflicting elements at play the viewer wrestles with the visual conflict. The viewer's attention is held in suspense. As a result, they are able to notice other elements of the composition that they might not have taken the time to absorb. This is a delicate balance of giving the viewer what they want while withholding just a bit to create a suspense. This is a skill that is cultivated over years of producing artwork.



## CHAPTER 2 REVIEW

1. What are five basic characteristics to look at when evaluating a body of clay?
2. What is plasticity?
3. When do the oldest discovered bricks date back to? Where were they found?
4. How is clay formed?
5. What is the chemical formula for clay?
6. What are some different types of clay and how are they different from each other?
7. What is the oldest piece of intact fired clay to have ever been found? Where was it found? When does it date back to?
8. How did early artists process naturally found clay to prepare it to work with?
9. What are five basic methods for creating pieces out of clay?

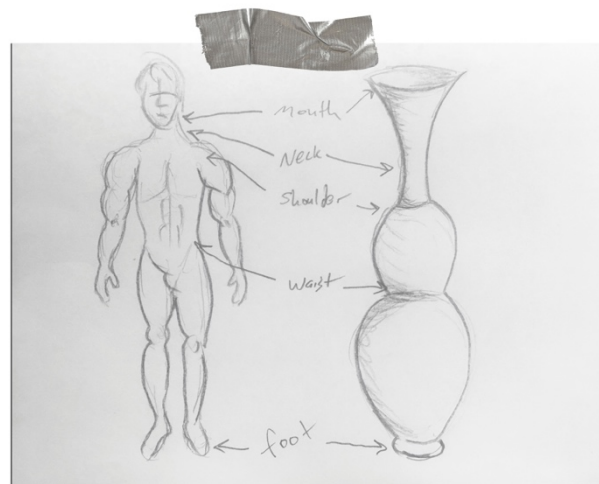
# CHAPTER 3

## PINCHING

For thousands of years man has used clay all across the globe. Man has utilized many of the same methods to create a menagerie of different type vessels to meet vastly different needs.

A vessel is simply a hollow container that can hold liquid. A vessel is also a boat or ship that can travel across water. In a sense humans are also a vessel both literally and figuratively. We as humans do hold

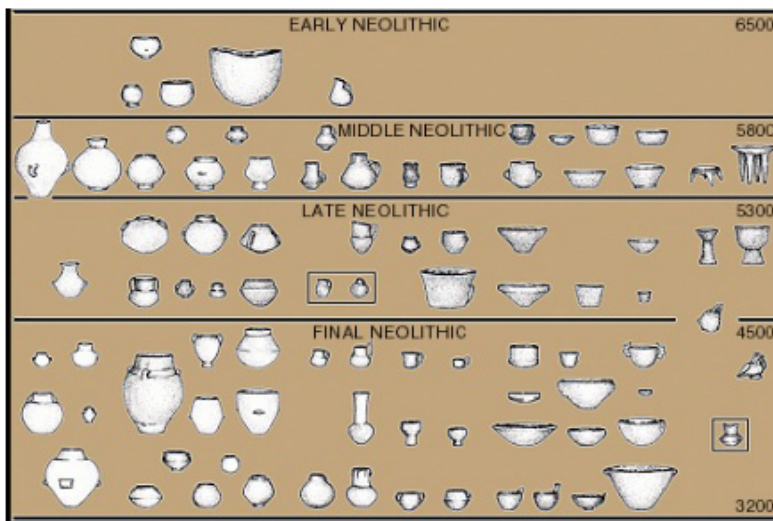
water, considering we are nearly 70% water. Also we are vessels that carry our thoughts, feelings and emotions. It isn't just a coincidence that we have personified the vessel naming its parts after parts of the



human form. Mississippi potter George Ohr was always comparing his pieces to people. After a fire ravaged the Pot-Ohr-E in 1894 George Ohr sifted through the remains of his studio to preserve the charred remains of his creations. He referred to these pieces as his “Burnt Babies”. Along the same line of thinking he said “I am the apostle of individuality, the brother of the human race, but I must be myself and I want every vase of

mine to be itself.” Since the beginnings of ceramics man has created pieces that seem to go on to have a life of their own in the eyes of their creators. The processes can be very difficult, intricate, and time consuming or can be so simple that a young child can also have success.

In this chapter we will be looking at one of the most primitive of all hand-building methods for creating vessels out of clay. The pinch method was first used during the Neolithic Era. It has been used ever



since to shape and form products born in the mind's eye and then materialized in clay. The pieces illustrated here were all created using

various pinch methods over thousands of years. The

Shaping clay using the pinch method is easy even with a large range of clay types. The instinct to pinch is a natural response to the feel of the clay in a person's hands. If you give a child a piece of clay they will begin to pinch and shape it even without instruction. One advantage to pinching

verses other methods is that the process is slow and methodical. Working with this process gives the artist time to make decisions and adjustments about the shape and form of the piece being created. Often potters on the wheel may find themselves in a situation where irreversible changes have been quickly executed on the vessel that were not intended. Therefore, when you pinch you have much more control over the piece. Pinching is slow and steady and very tactile. You must be very deliberate in your actions to alter the clay.

Of course you'll need practice to master this technique. Even if you have never made a pinch pot you will notice a dramatic improvement between your first and fourth or fifth pinched piece. Another advantage to working with the pinching method is that you are born with the tools that you will need to complete the task. Other than the clay, your hands and brain are about all you need. Eyes are quiet helpful but not necessary in the process. In fact, a good exercise is to actually try to make a simple pinch pot or bowl with your eyes closed. This activity sharpens the physical sensory response to the feel of the clay.

Pinching may seem very elementary (possibly because that is the extent of the experience that many have had with clay) but it is a very capable method for making very sophisticated pieces. Although the natural response to pinch the clay is very deeply rooted in our instincts there is still much to learn through the process.



Roll it into a ball.

Poke thumb in

Lightly Pinch and turn.

Keep Pot in hand to keep bottom round.

Tap top flat on table

Roll small Coil

Make ring from coil for bottom

Step back with sense of accomplishment.

Blend ring into bowl on inside and outside of ring

# HOW TO MAKE A PINCH BOWL

1. Here are some instructions for making a simple, hand built bowl. A bowl made this way is called a pinch pot, because of the way the clay is squeezed between the thumb and fingers to form the walls.



Start with a ball of clay about the size of an orange.

2. The next step to making your pinch pot is to start the opening. Cradle the ball of clay in one hand and gently press the end of your thumb into the clay. A good method is to press down a bit with your thumb and then give the clay a bit of a turn — press down



some more and then give it another little turn. This helps to keep the hole you are making centered and the walls an even thickness. When you sense that you are getting close to the bottom side of the clay ball, stop before you go through.



3. Now the fun part begins — forming your pot! The idea is to gently press the clay from the inside with your thumb against your fingers on the outside. Each time you press a bit with your thumb, give the clay a bit of a turn before you press again. It doesn't matter if you turn the pot clockwise or counterclockwise, just work in a way that seems natural to you.

4. This photo shows the technique from a different angle. If you



curve your fingers slightly, you can control the shape a bit better and make a more rounded form. If your fingers are held flat against the outside, the pot rim will flare out more to make an open bowl shape. Try and shoot for a half sphere shape bowl.

Continue the pinching and turning method until the walls of the pot are thinned out to a thickness that seems about right to you.

5. With a bit of patience and practice, it is possible to make quite a finely crafted bowl with this simple technique. The main thing to remember while working is to try for an even wall thickness as you pinch your way around the bowl.



Use a coil on the bottom to make a little foot for the bowl so that it does not rock back and forth when it sitting on a flat surface.

**Date Assigned:** \_\_\_\_\_

**Date Project will be graded:** \_\_\_\_\_

**Project Rubric:**

**Points    Your score    Criteria**

1-25		Walls even thickness from top to bottom
1-25		No cracks or lumps
1-25		Nice looking coil foot seamlessly blended in all the way around
1-25		Name easily read on bottom

**Total** \_\_\_\_\_

More complicated forms can easily be made by joining several pinched pieces together by slipping and scoring. It's often smart to start with a sketch that can give you direction and an end product to shoot for. Here you are able to see how the maker of this vessel combined eleven smaller pieces to create a larger and more complicated form.



Each individual piece is still very simple to make, however, by



combining sections you can create a much more elaborate type design. Another consideration to make when making pinch pots is the surface treatment that you will have. Pinch pots make great organic shapes that make wonderful surfaces for some interesting surface treatment.

# CREATIVE PINCH POT

Now that you have had some experience with clay and using the pinch method to create ceramics pieces, its time to create a piece that is a bit more self-expressive!

\*\*\*For this assignment you are to create a vessel that exhibits the following:

1. Measure at least 7 inches tall
2. Must be a vessel of some sort
3. Must utilize the pinch method as primary method for forming piece
4. Exhibit a high level of craftsmanship
5. Creative and self inspired

Begin with some sketches of different ideas that you have. Once you decide on your favorite sketch, refine your ideas in a larger more polished sketch. Now that you have a plan of what you'd like to make, decide how you will make the piece. Get started!

A *Vessel* is defined as a:

1. A craft for traveling on water, now usually one larger than an ordinary rowboat; a ship or boat.
2. An airship.
3. A hollow or concave utensil, as a cup, bowl, pitcher, or vase, used for holding liquids or other contents.



**Date Assigned:** \_\_\_\_\_

**Date Project will be graded:** \_\_\_\_\_

**Project Rubric:**

**Points Your score Criteria**

1-25		Creative Vessel form
1-25		No cracks or lumps : good craftsmanship
1-25		Atleast 7 inches tall
1-25		Name easily read on bottom

**Total** \_\_\_\_\_

# OWL PLANTER ASSIGNMENT

Lets face it, everyone likes owls. They are so awesome and cool. They have a cult following that makes women like them for some weird reason. A couple years ago I was featured in the Clarion Liar. The article discusses the owl as a popular motif in arts and crafts. I've begrudgingly put them on mugs for years now. Basically, they are cute and they increase sales.



For this assignment we will be making an owl planter.



Take a ball of clay that is about the size of a tennis ball. Take off 1/5<sup>th</sup> of the clay to use later. With the larger piece start pinching out a pot shape. Slowly refine your shape by pinching the clay into shape.



Make a slight lip that flares out at the top. Not too much . make two small triangles that will be the ears, two larger quarter size circles, and two smaller nickel size circles, also you need a pencil size coil.



Place the triangles on the lip of the pot both centered toward the front of the pot. Blend the clay together with your finger. Place a coil in place to make the brow let the ends go over the ears blend into place.



Put the eyes in place by putting the large circles on first and then the small.



Use the back of a brush or a pencil to make the irises. Apply the wings and feet you are done. Hip hip hurray!!!!Woohoo!!!!



This is the finished product. Imagine this with a small plant of some sort.  
Awesome.



An example of what not to do.

Good luck

Not only is pinching convenient in that it requires no additional tools, it also can create polished refined forms that rival anything made on the potter's wheel. Pinching is a very versatile method for creating vessels of varying degrees of refinement. Pinch pots often deliberately look unrefined and somewhat primitive. However, they can with a little work and effort look very sophisticated.



## **CHAPTER 3 REVIEW**

1. What is a vessel?
2. What do vessels have in common with people?
3. What are some common names of parts of both vessels and people?
4. When were the first pieces of pinch pottery created?
5. What are some advantages of working with a pinch method?
6. What tools are necessary for creating pinch pots?
7. Describe the process of making a simple pinch bowl.

8. Why is it important to place a ring made from a coil on the bottom of the rounded bowl form?

9. Describe how more complicated forms can be made using the pinch method.

10. What do you like/dislike about pinching? Explain your answer.

# CHAPTER 4

## COILING

Like the pinch technique coiling has also been in practice by potters all over the world for thousands of years. The technique itself is much more versatile than pinching and more easily allows the maker to have pieces that are larger. The method does require more skill but is still easy enough even for even a child to do. The Jomon Ceramic artists from Japan's Neolithic Era are perhaps the first to use coils. There are intact archeological finds that date as far back as 10,500 B.C. Its name is derived from the "cord markings" that characterize the ceramics made during this time. Jomon people were semi-sedentary, living mostly in pit dwellings arranged around central open spaces, and obtained their food by gathering, fishing, and hunting.

All Jomon pots were made by hand, without the aid of a wheel, the potter building up the vessel from the bottom with coil upon coil of soft clay. As in all other Neolithic cultures, women produced these early potteries.

The clay was mixed with a variety of adhesive materials,

including mica, lead, fibers, and crushed shells. After the vessel was formed, tools



were employed to smooth both the outer and interior surfaces. When completely dry, it was fired in an outdoor bonfire at a temperature of no more than about 900°.

## HOW TO MAKE A COIL POT

1. First you will need to know how to make a coil. To make a coil out of clay squeeze a piece of clay into a rough rope shape. Place the clay on a table or flat surface. Using the palm side of your hand roll the clay under your hands using a light forward pressure. If you begin to get flattened coils you are pressing too hard. Try to achieve an even thickness from one side of the coil to the other. Try to go for a coil thickness that is just slightly thicker than a number two pencil.
2. Start out with an 11 inch coil that you spiral around itself to make the base of the coil pot. Now smooth out one side of the base. This will be the side that is on the inside of the pot. This method is preferred by many instead of simply pinching out a base or cutting a round slab to begin. Try to only use coils to make the piece.



3. After you have made the base roll out another coil. Make a ring out of it by blending one end into the other. Place on top of the base. You may have to play with the length of that first coil that goes on the base. You want it to sit on top even with the outer edge of the base. This sets the stage for all the coils that are to come.

4. Now the hard part is behind you. Simply repeat the last step over and over again adding rings of coils to your pot. It is very important that you blend



each coil into the coil that is under it. If the clay starts to dry you must score and slip each coil as well as blending the interior. **DO NOT BLEND**

**TOGETHER THE COILS ON THE OUTSIDE OF THE POT.** That would simply defeat the purpose of creating the pot using the coil method. You should see the coils on the outside.

5. Your coil pot must have a base and an additional 15 rings.



**Date Assigned:** \_\_\_\_\_

**Date Project will be graded:** \_\_\_\_\_

**Project Rubric:**

Points	Your score	Criteria
1-25		Pot goes straight up and is symmetrical (not leaning or flaring out)
1-25		The interior is blended together smoothly
1-25		Base and 15 additional rings
1-25		Name easily read on bottom

Total \_\_\_\_\_

Now that you have finished your first coil pot let's take an objective look at how well your piece has turned out. Do your coils have a uniform thickness? Did you score and slip well enough that the coils are well attached? Is the interior of the pot smoothed out and free of cracks and irregularities? What are some aspects of the piece that you feel you could improve on if given the opportunity?

Name: \_\_\_\_\_

Ceramics

Date: \_\_\_\_\_

## Predetermined Coil Pot Project

Start with a 12' long coil that you spiral around it self to create the bottom of the vessel. After making the bottom make rings out of coils that are the specified lengths as seen listed below? Stack each ring and then smooth it on the inside. You may find a pencil eraser handy for smoothing the coils together on the inside. Start with 1 and work to 24.

1. 7"
2. 7.5"
3. 8"
4. 9"
5. 9.5"
6. 10"
7. 10.5"
8. 11"
9. 12"
10. 11.5"
11. 11"
12. 10.5"
13. 10"
14. 9"
15. 8"
16. 7"
17. 6"
18. 5.5"
19. 5"
20. 5"
21. 5"
22. 6"
23. 7"
24. 8"



**Note:** Make sure that all coils are blended together on the inside but still visible on the outside.

Date Assigned: \_\_\_\_\_

Date Project will be graded: \_\_\_\_\_

**Project Rubric:**

<b>Points</b>	<b>Your score</b>	<b>Criteria</b>
1-25		Pot is a classic "S" shaped pot
1-25		The interior is blended together smoothly
1-25		Base and 24 additional rings
1-25		Name easily read on bottom

**Total** \_\_\_\_\_



Name: \_\_\_\_\_

Ceramics

Date/Period: \_\_\_\_\_

## CREATIVE COIL VASE

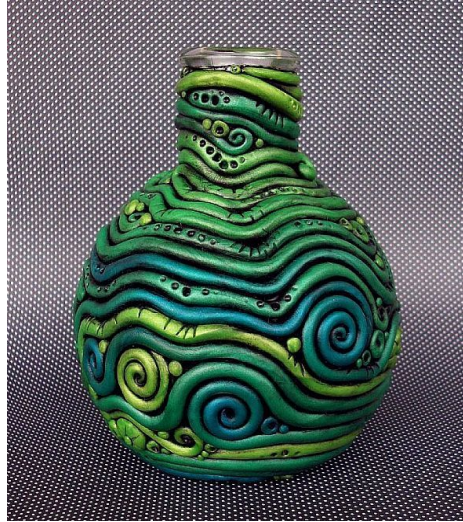
Now that you have had some experience using the coil method to create ceramic vessels, it is now time to create a piece that is a bit more self expressive and unique!

\*\*\*For this assignment you are to create a coil vessel that exhibits the following:

1. Measure at least **7 inches tall**
2. Be a **vessel** of some kind (can hold liquid)
3. Utilize the **COIL** method as the primary method of creating the piece
4. Must have a **minimum** of 3 patterns of coils in the design
5. **Creative** and self-inspired

**Begin with 8 sketches of different ideas that you have for this project.** Once you have researched different coil pots and have come up with your favorite design, refine it by drawing on a larger, more polished sketch. Now that you have a plan and sketch, get the supplies you will need and get started!

*Your imagination is the limit!*



Date Assigned: \_\_\_\_\_

Date Project will be graded: \_\_\_\_\_

