PURDUE UNIVERSITY | Extension - Elkhart County

ELKHART COUNTY CERAMICS

CERAMICS

For State Fair purposes, Ceramics is classified as an Arts & Crafts project. Entries in the Ceramics project can be selected for exhibit at the Indiana State Fair in the Arts & Crafts category. State Fair entries will require completion of the State Fair 4-H Craft Information Card (4-H-618a-W).

The categories of ceramics are Greenware and Handbuilding. Specific level requirements may be found in the project manual available from the Extension Office.

General requirements for all levels:

- Put your initials and the year on the bottom or inside of your piece. This can be scratched in or written using permanent marker.
- Do not use felt on the bottom of the piece. NOTE: After county and state fair judging, you may want to protect your furniture by covering the bottom of the ceramic piece with small pieces of felt.
- Exhibit may not exceed 24 inches in any direction.
- Use ceramic paints, stains, and glazes. No craft paints should be used. Do not mix glaze colors.
- Each piece should be properly fired.
- Each exhibit must include a 3 inch by 5 inch card detailing each step in the process of completing the piece(s).

<u>Greenware:</u>

Level A (3rd – 4th Grade)

Grade 3 – Exhibit 1 piece which you have cleaned, fired, and glazed, using 1 color of glaze. Underglaze may not be used. Dry footing may be used. Mother of Pearl may be used

Grade 4 – Exhibit 1 piece which you have cleaned, fired, and stained with acrylics, using up to 15 colors**.** Some simple dry brushing may be used. It is recommended the article be sprayed with an acrylic sealer.

Level B (5th – 6th Grade)

Grade 5 – Exhibit 1 piece which you have cleaned, fired, and stained with acrylics using between 5 and 20 colors. Dry brushing is recommended. It is recommended the article be sprayed with an acrylic sealer.

Grade 6 – Exhibit 1 piece which you have cleaned, underglazed, fired, and glazed using between 5 and 25 colors of greenware underglaze or Concepts underglaze and 3 coats of clear glaze. Mother of Pearl may be used. Base Coat – using 3 different colors of acrylics and the dry brush using up to 25 colors of acrylics. Some detailed work should be applied.

Level C (7th – 9th Grade)

Grade 7 – Exhibit 1 piece using unlimited amounts of acrylics, adding some glazed work on project with the dry brushing and detailed work. Cover up glaze work before sealing with acrylic sealer.

Grade 8 – Exhibit 1-2 related pieces which you have cleaned, fired, base coated, and antiqued. Base Coat, may use multiple colors of acrylics. Then use a sponging affect with unlimited amounts of acrylics. You may use some dry brushing and detailing, then spray with sealer.

Grade 9 – Exhibit 1-2 related pieces which you have cleaned, underglazed using unlimited colors of greenware underglaze or laze or Concepts underglaze, fired, and glazed with 3 coats of glaze. Fire Gold and/or Silver and Mother of Pearl, can be an option.

Level D (10th – 12th Grade)

You are encouraged to try new techniques each year.

Grade 10 – Exhibit 1 piece or up to 5 related pieces which you have cleaned, fired, stained and/or antiqued, and sealed. You may use any number of colors. Use 2 of the techniques listed below. OR exhibit 1 piece or up to 5 related pieces which you have cleaned, underglazed, fired, and glazed. You may use any number of colors. Use 2 of the techniques listed below.

Grade 11 – Exhibit 1 piece or up to 5 related pieces which you have cleaned, fired, stained and/or antiqued, and sealed. You may use any number of colors. Use 3 of the techniques listed below. OR exhibit 1 piece or up to 5 related pieces which you have cleaned, underglazed, fired, and glazed. You may use any number of colors. Use 3 of the techniques listed below.

Grade 12 – Exhibit 1 piece or up to 5 related pieces which you have cleaned, fired, stained and/or antiqued, and sealed. You may use any number of colors. Use 4 of the techniques listed below. OR exhibit 1 piece or up to 5 related pieces which you have cleaned, underglazed, fired, and glazed. You may use any number of colors. Use 4 of the techniques listed below.

Techniques: Air brushing, carving/piercing, chalk, detailed porcelain, detailing (such as eyes, script, etc.), decals, dry brushing, Embellishments – in moderation, gold firing, Mother of Pearl, red stain or red glaze, sgraffito, stain, white bark – specialty glaze, white bead – specialty glaze, wax resist specialty products for glazing, French dimensions for creating detailed glazing work.

Using all the previous techniques may use up to 7 related pieces using unlimited colors.

Detailed Work, Decals, Air Brushing, Red Stain, Dry Brushing, Mother of Pearl, Fired Gold or Silver, Sponging. All are encouraged

HAND BUILDING

General Requirements for all levels:

Exhibit may not exceed 24 inches in any direction.

Put your initials and the year on the bottom or inside of your piece. This can be scratched in or written using permanent marker.

Do not use felt on the bottom of the piece. NOTE: After county and state fair judging, you may want to protect your furniture by covering the bottom of the ceramic piece with small pieces of felt.

Use ceramic paints, stains, and glazes. No craft paints should be used. Do not mix glaze colors.

Each piece should be properly fired.

Each exhibit must include a 3 inch by 5 inch card detailing each step in the process of completing the piece(s).

Level A – Grades 3 & 4
Grade 3 – Exhibit 1 hand-built piece formed by pinch, coil, or strip/slab method. Apply a 1 color glaze. Keep piece simple – no handles or lids.

Grade 4 – Exhibit 1 piece formed by pinch, coil, or strip/slab method, using no more than 3 colors of glaze. No stain may be used. Up to 2 texture techniques are required.

Level B – Grades 5 & 6
Grade 5 – Exhibit 1 piece made from a hump mold with modeling and hand building techniques applied. A stain or glaze should be used. Use no more than 3 colors. Possible exhibits include a mushroom or turtle.

Grade 6 – Exhibit 1 piece formed by pinch, coil, or strip/slab method, or hump mold, using up to 5 colors of stain or glaze. Use 1 or 2 texture techniques.

Level C – Grades 7, 8, & 9
You may choose the appropriate finish for the pieces. The number, color, and type of finish all depend on the piece(s). For example, do not use lead based paint on articles used for serving food.

The following designing techniques may be used in this level:
- ❖ Incising
- ❖ Piercing/Carving
- ❖ Sgraffito

Grade 7 – Exhibit 1 piece of coiled or slab/strip method to form a container (box, vase, bowl, jar, etc.) with a coil handle. May include a flanged lid. One designing technique may be used but is not required.

Grade 8 – Exhibit 1 piece of coiled or slab/strip method to form a container with a pulled handle and a flanged lid. 1 designing technique is required.

Grade 9 – Exhibit 1 piece of coiled or slab/strip method to form a free form sculpture.

Level D – Grades 10, 11, & 12
Choose more difficult projects each succeeding year.

Examples of Shaping Techniques: Coil construction, Hump mold, Potter's wheel, Sculpturing, Slab/strip construction

Examples of Designing Techniques: Embellishment – stones, buttons, wire, etc., Incising, Piercing/carving, Sgraffito, Slip Trailing

Grade 10 – Exhibit 1 piece or a set of 2 related articles using at least 1 shaping technique and at least 1 designing technique.

Grade 11 – Exhibit 1 piece or a set of 2 related articles using at least 2 shaping techniques and at least 1 designing technique.

Grade 12 – Exhibit 1 piece or a set of up to 3 related articles using at least 3 shaping techniques and at least 2 designing techniques.

See Glossary for definitions.

GREENWARE CASTING

Greenware is the name given to unfired clay objects. The objects have been made by casting (pouring or filling) plaster molds with casting slip (clay in liquid form). Their shapes are formed by the molds and, when removed from the molds and dried, they are still raw clay. In this state, they are called greenware. Greenware is very fragile and must be handled with care.

PREPARING THE GREENWARE
It is well to have a good supply of the so-called conventional tools which are vital and necessary to obtain good results. For beginners, the list is simple and kept to a minimum:

- one piece of greenware
- one clean-up tool
- a sponge (silk sponge is preferred)
- a small bowl of water
- sheets of newspaper
- a dusting brush (a soft bristle brush which removes dust from the article; a brush works better than blowing off dust)
- sander or fine grade sandpaper
- various size brushes for painting or glazing

CLEANING THE GREENWARE
The greenware is not dirty but it does have seam lines which are created where the pieces of mold join together. Cleaning the greenware is merely carefully

removing these seam lines and other small imperfections from the object before it is decorated or bisque fired.

Wait until your greenware is bone dry before cleaning. Handle greenware with care, as it is very fragile and easily broken.

1. Place it on a paper.
2. Take a clean up tool (an old paring knife or a narrow, short, sharp blade will do) and cut the seams away.
3. Use sandpaper to smooth the seams out. They are still there as long as you can feel them with your finger. If you don't feel them, they're gone.
4. Run your fingers around the edges. Use your tools and sandpaper to remove all the sharp edges.
5. If there are little areas of reveletts where some protruding part might have been attached in the casting, clean these off. Such a place might appear where the cup handle joins the cup, etc.
6. Set the piece aside after brushing it off. Empty the dust into a waste can.
7. Thoroughly wet your sponge in water. Squeeze it quite dry. Sponging is necessary, but do not sponge more than is absolutely needed. If you over-sponge, it can have a sandy look when it is fired with glaze.
8. Go over every area you have cleaned with your tool or sandpaper, smoothing as you go. Wash the sponge as often as necessary; don't let it get gummy.
9. At this point a small pin point pit may occur. Dip your finger into clean water and let a drop fall onto the pin point. This will show you how large the hole is in your article.
10. Dip your finger into the clean water again and then into the dry dust saved from cleaning the piece. Place this dust on the pin hole and rub. Continue to pick up water and dust until the hole is filled, then wet finger once more and smooth to the exact surface of the article.
11. Never force a sponge into an area such as handles, etc. Use a small brush dampened in water and wash down as if you were sponging that area.
12. In a desirable area (usually the bottom), write your name, or initials and date. Dampen the area and trace over your first writing with the clean up tool until the name looks like it is carved into the ware.

MENDING GREENWARE

1. Using sandpaper or a knife, scrape some clay from the bottom of the dried ware.
2. Mix it with the slip of the same clay and wedge the mixture tightly into the crack with a brush or modeling tool.
3. If the piece has a clean break, it can be mended by making the pieces slowly and uniformly moist to the leather-hard stage by wrapping with a moist rag and oilcloth.
4. Mend the broken pieces with thick slip.
5. It the piece is badly broken it cannot be mended.

CASTING PROCEDURES

General rules:

1. Make sure the mold is clean.
2. Mold should be slightly moist.
3. The first casting should be discarded because it absorbs the scum formed in the plaster during the process of setting.

4. Dust the inside of the mold lightly with cornstarch before each casting. This helps to get the cast out of the mold easily.
5. Don't remove cast until it is firm enough to hold its shape.
6. If cast is kept in mold beyond the leather-hard stage, the cast may crack.
7. Clean all seams and imperfections on the cast when it is bone dry.
8. Remove dust particles with a soft brush.
9. Make sure mold is secured with strong bands.
10. If the greenware is hard to remove from the mold, lightly judo chop with the side of the band around the edge of the mold.

CASTING A MOLD

1. Separate the mold, check for dust and foreign matter, put mold together, and secure with rubber bands.
2. Casting slip should be smooth and creamy in consistency.
3. Pour a steady stream of slip into the mold until the slip is level with the top of the mold.
4. The slip level will sink as the mold absorbs water. Keep adding enough slip to keep the mold full.
5. The slip will form a shell of clay inside the mold.
6. When the shell reaches the desired thickness, usually 1/8 inch thick, pour out the excess slip. Allow to drain for several minutes.
7. Clean all clay from outside of mold using a dull knife.
8. Place mold on its side and remove bands.
9. Allow mold to dry awhile longer.
10. Slowly left mold apart. DO NOT force mold apart. If it won't come apart, let it set awhile longer.
11. Take care that the clay is hard enough to support its own weight before completely removing from mold.
12. Smooth with fine sandpaper when bone dry.

HAND-BUILDING

ALL ABOUT CLAY

This information is especially for younger students.

Pottery clay is easiest to work with when purchased in a moist form from a ceramics supply shop. Most clay purchased in this manner does not have to be wedged. (Wedging is a process of cutting, slamming, and kneading clay in repetition to remove air bubbles.) Cut your clay in half with a wire. If the inside cut edges are smooth and free of air bubbles, no wedging is necessary. If wedging is necessary, get specific instructions from your teacher or from a book.

For hand-building of pots, purchase a low fire pottery clay in either Indian red coloring or white talc coloring. For sculpture, purchase a terra cotta clay (a low firing red clay with grog added). For "throwing" clay on a potter's wheel, purchase stoneware clay – a high firing buff colored clay.

WORKING WITH CLAY

A. Always cut large pieces of clay by drawing a wire through the clay.
B. A fettling knife is helpful for cutting smaller pieces, but a table knife will work just as well.
C. Pottery clay begins to dry out as soon as it is exposed to air, so…
    1. Always keep clay you are not working with in a plastic bag.
    2. Pieces of clay you have out but are not ready to use should be covered with a damp – not wet – rag.
    3. Do not walk away from a clay article in process unless instructions say to allow piece to air dry or become leather-hard. Even then you should return frequently to check the clay object.
    4. If you must stop work for a short time before a clay piece is finished, put the article on a small piece of finished wood (such as a piece of paneling) or masonite, cover with a plastic bag, and seal. If several days or a week will go by before you work on the piece again, wrap damp (not wet) rags around, but not under, the base of the piece before sealing everything in a plastic bag.
D. Clay should not be worked into anything thinner than ¼ inch in hand-building or it tends to crack.
E. If clay becomes too dry and cracked while working with it, avoid wetting the clay. Try to work out cracks by rubbing with wood modeling tool, a popsicle stick, or your fingernail.
F. Clay should not be left thicker than ¾ inch at any one place or it may never dry out enough to be fired.
G. Always work with clay on a piece of canvas or the backside of a piece of oil cloth or vinyl cloth.
H. Adhering Clay/Scoring and Slipping– Adhere pieces of clay together by first scoring (making little slits) into the areas to be joined. Scoring may be done with the wire end of a clay modeling tool or with a fork or nail. Then apply slip

(a mixture of clay and water the thickness of a milkshake) over the scored areas to be joined using a brush or fingers. Push the two pieces together and smooth the clay gently from one edge to the other so no crack is visible at the joint on the inside or outside.

I. Smoothing a clay article on the inside and outside is done with the fingers all during the building process. When the article is leather-hard (clay that is still wet but too firm to bend), a damp sponge and wire modeling tool may be used to scrape and smooth a very even finish.

J. Most designing is done at the leather-hard stage or just before leather-hard. See designing methods in this manual for examples.

K. When clay article is finished, incise or scratch your name or initials and date into the bottom of the piece before the piece is completely dry.

L. When clay pieces are bone dry, they are extremely brittle and must be handled with great care, picking them up only from the base. Clay articles in the bone dry state are referred to as greenware.

M. Pottery clay must be fired in a kiln to become sturdy. This is a baking process at very high temperatures that must be professionally done for you because each type of clay has appropriate firing temperatures and conditions. Always make sure your article is bone dry before it is fired. This first firing is called a bisque firing.

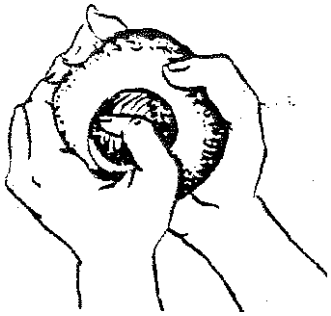
N. Clean up with clay is rather simple:
   1. Squeeze all tiny pieces of unused clay into a tight ball and work them together until no cracks are showing. You may need to use some slip to help soften the clay.
   2. Wrap the leftover clay in wet rags and store it in a sealed plastic bag for further use. Slip may be stored in sealed margarine tubs.

   3. Clay work surfaces, tools, and hands should be wiped clean with fingers, dry rags, or paper towels.
   4. Take care not to let pieces of clay go down a sink drain as clogging will result.
   5. After all clay particles that can be removed are removed, hands and tools may be washed in a sink. Be sure to dry tools thoroughly. Canvas or oil cloth for working on should simply be dried out and then can be used again.
   6. Brushes used for slip or glaze should be cleaned very thoroughly with water.
   7. Clay dust usually washes out of clothing.

O. Bisqueware is the term used to refer to clay articles after they have been fired once. In this state the articles are porous (water will seep through). In order for the clay article to hold liquid of any kind, it must be glazed and fired again. See glazing instructions in this manual.

CREATE A PINCH POT

Opening: Hold a small ball of clay in one hand. **Rotate** the ball slowly in small steps as you press into the center of the ball with the thumb of your other hand. Keep rotating as you press until you are about 3/8" from the bottom. Try not to make the hole wider than your thumb yet.



Spread the Floor: With your thumb inside the pot and your two middle fingers of the same hand outside supporting the clay, spread the bottom by lightly pressing with your thumb while you **Rotate** the pot all the way around. **Raise the Walls**: Move up the wall with the same press and rotate motion. Work closer to the rim each time you go around. Try to keep the wall an even thickness. Smooth any cracks in the rim right away. Leave extra clay at the rim for finishing later. After raising the walls, strengthen the rim by pressing down on it while supporting both sides. **The Inside**: Slide your thumb up the inside of the walls, supporting the clay with your fingers of the same hand on the outside. Rotate the pot with your other hand. Stretch the clay. Feel for even walls as you thin them. Stroke and rotate until you have gone all the way around. Repeat, starting higher. Continue until just under the rim. **Finish the Rim**: Thin and shape the rim all the way around. **The Bottom**: Gently tap the pot on a table to flatten the bottom so your pot can stand by itself.

Tip: As your clay starts to get stiff, you can put it down to work. Put in a small piece of paper or cardboard so it can rotate freely.

Tip: Remember, once you pinch in one place you need to repeat that pinch for one complete revolution to keep your pot round.

Do not let the side of the pot become thinner than ¼ inch. Work quickly with the clay so it does not dry out. Avoid using water because it weakens the clay.

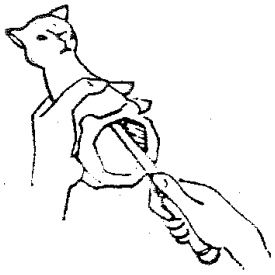
The clay can be pinched and squeezed to the shape you want. Smooth the finished piece inside and out with your fingers. Designs may be incised or scratched into the pot with a nail. Indian designs or designs from nature are most appropriate.

Shape and Pressure: For a wide form, press more from the inside. For a higher rounder bowl, use equal pressure inside and outside. For a taller form, use more pressure on the outside.

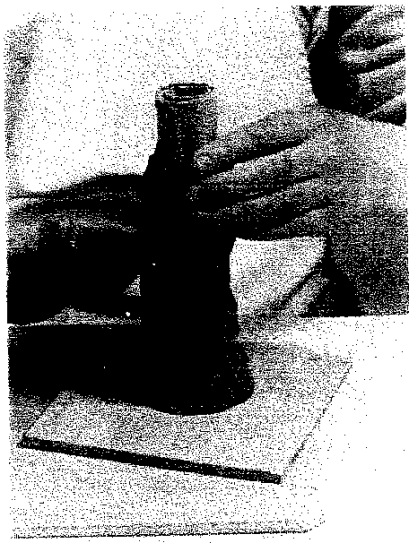
PINCH

MODELING

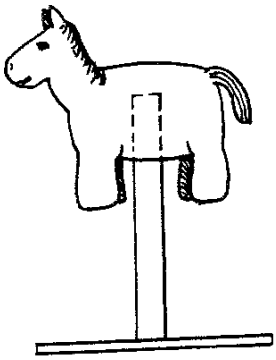
Take a hunk of clay and pinch, pull, squeeze, and carve it into the shape of your choice. Be sure to follow adhering suggestions if putting parts together. The modeled figure should not be more than ¾ inch thick in any one place unless it is hollowed out after it becomes leather hard.



Beginning to add coils around a paper-covered peg



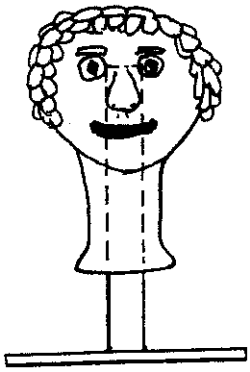
Building the body



Modeling over a bottle

Adding coils for arms

Adding hair and modeling details

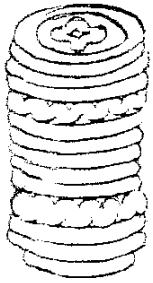


As soon as the clay is able to support itself, remove it from the tube and your piece will crack as it dries.

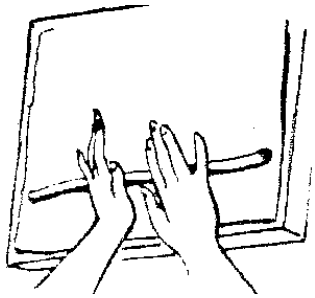
Coil Construction:

Note: Beginners in coil construction will find it easier to start with a pinch pot base for their first coil article, then use a coil base for their other two articles.

A. Pinch Pot Base
   1. Make a pinch pot with a wide open top.
   2. Flatten the bottom.
   3. Build onto this pot by adding coils.

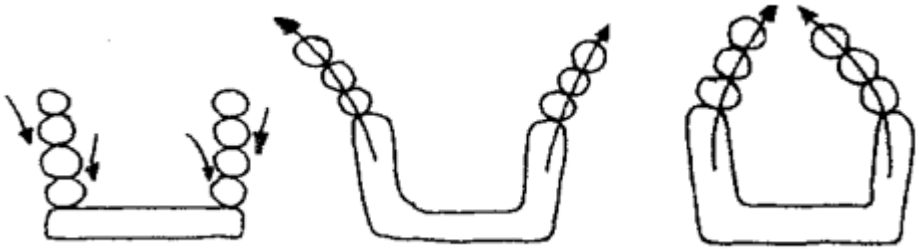


B. Coil Building
   1. Roll coil on canvas by squeezing a 1-inch cylinder in your hand, then rolling the cylinder into a rope using the fingers of both hands flat and moving hands from center of rope to ends while rolling back and forth. Coils should be pretty even and around ½ inch thick.



   2. Set coil a little to the outside of the coil beneath it if the pot or figure is to become wider. Set coil a little to the inside of the coil beneath it if it is to become narrower.
   3. Follow adhering instructions to join coils to each other.
   4. Always smooth the inside of a coil pot. The coils are usually left showing on the outside.
   5. If the clay structure becomes too soft to hold its shape, let it air dry for 30 minutes to 1 hour before adding more coils.
   6. The structure grows heavy the higher it goes because of the wet clay-build in stages to allow clay to “set” before adding too much height.

C. Coil Base
   1. Roll out one even long coil that is ½ inch to ¾ inch thick.
   2. Score the coil on both sides.
   3. Spread both sides with slip and make a tight spiral the size you wish your base to be.
   4. Gently smooth both top and bottom of the base until it is flat.
   5. Build the rest of the article by adding coils as suggested previously.



Smooth down. Making it wider. Closing it in.

D. If article is to hold liquid or food, make sure there are no open cracks between coils. Cracks may be filled with little worm-like coils that are applied and smoothed into the larger coils.
E. Handles on pots or lids should be made with ½ inch coils flattened at either end and adhered securely to the article.

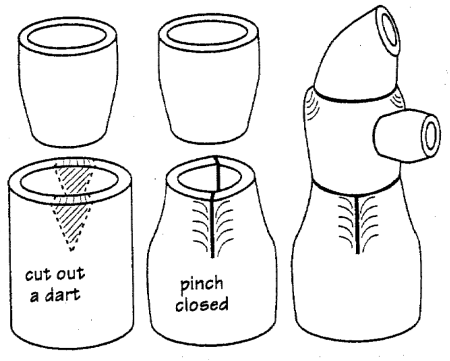
ROLLING SLAB

SLAB CONSTRUCTION:

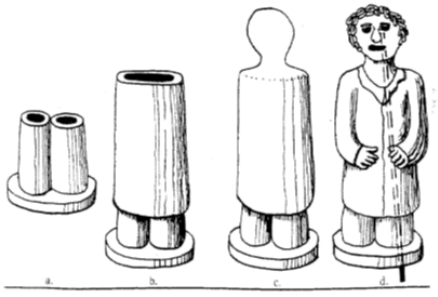
A. Put a flat lump of clay on canvas between tow ¼ inch thick sticks or pencils. Using a dowel rod or rolling pin, roll clay out into a flat slab.
B. Cut desired shapes for sides and bottom of article to be made.
C. For a cylindrical article, work with slab right away so it will curve into shape without cracking. Wrap around cylinder form (cardboard tube). Seal edges by adhering.

D. For box-like articles, let slab air dry for a short time before adhering edges, so the slabs will stand up on their own. Make sure all edges between slabs are adhered well and joints pinched or smoothed together inside and out so that no cracks show.
E. When slabs are leather hard, pieced designs may be cut into sides of the article.
F. Flat tiles made from ½ inch to ¾ inch slabs to which designs have been added make effective wall decorations or hot plates. Incising, texting, piercing, and adding on are especially effective design techniques for flat slabs.

DART and PINCH: To join two openings of different sizes, Cut V-shaped notches in the larger cylinder. Pinch the sides of the V together. If the clay feels too stiff, moisten around the V area and press gently inward. Score, slip and squeeze edges together for a secure join.

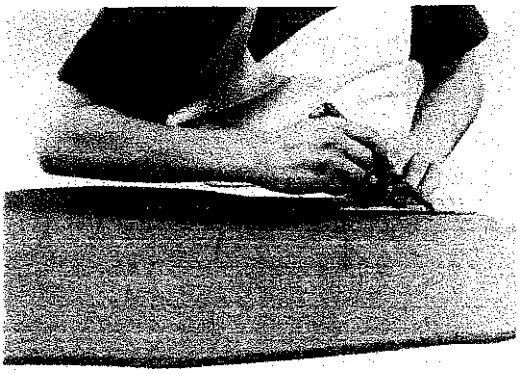


NEWSPAPER TUBES: As a clay cylinder dries, it shrinks. If it is supported by a stiff object, it will crack. A newspaper support will give with the pressure as well as let the Inside of the cylinder dry. Tape several sheets of paper together to make a heavy duty tube of any size that can be peeled away when the clay can support itself.

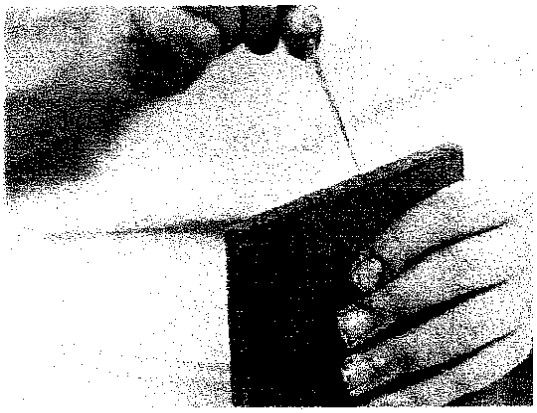


Combine slab with molded sections (head and arms) to make an interesting figure.

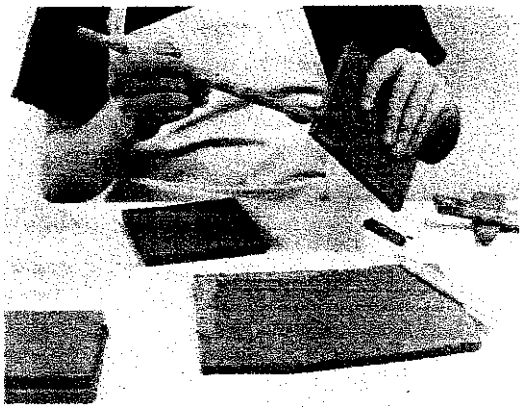
CREATING A SLAB BOX



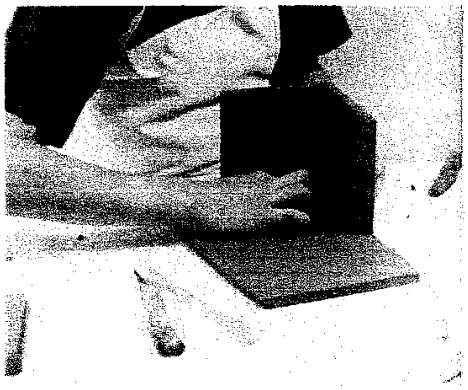
Stages in making a slab box. Marking out the clay.



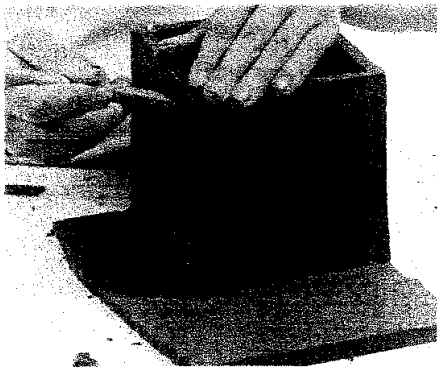
Scoring the edges to be joined



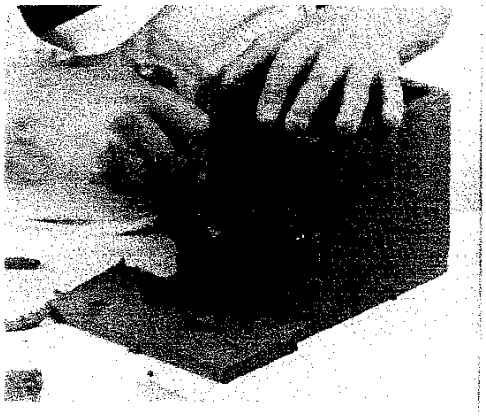
Painting slips on the joins



Adding a coil of clay inside to strengthen the joint

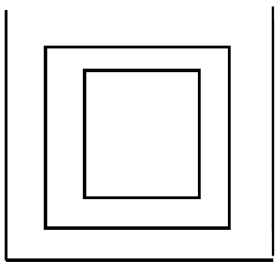


Scratching and smoothing the joints



Cutting excess clay from base

LID



Make a lid for the box by cutting another slab the same size as the top. Roll a coil and shape it to the size of the inside circumference of the box. Score and slip the coil to the lid. This is called a flange and it keeps the lid on the box.

HUMP MOLDING

Hump molding is done with a slab of clay draping it over a simple mound or mold. It is necessary to find or make a mold to support the clay while it is being worked on and is drying. Molds can be solid or made with old newspaper. If you use newspaper start with newspaper that has been crumpled into large balls. Form the balls of paper into the desired shape (some examples of shapes can be, but are not limited to, masks, faces and turtles) and wrap them in a full sheet of paper. Enough paper must be used to make a firm mold shape. Tape can be used to hold edges tight

When clay dries it has a tendency to shrink. It will be necessary to place two or three layers of newsprint, taped in place, between the mold and the clay to prevent the clay from sticking to the form. Place the slab over the mold and form it by hand being careful to keep the slab clay at an even thickness. Cut away the excess clay and smooth the edges. Mold the rest of the slab adding the desired details. (Remember to initial and date). When the clay dries and starts to hold the shape it may be necessary to carefully remove the stab from the mold to check for thickness. If the clay is too thick it can be thinned out from the back with a molding tool or wire loop to retain an even thickness. Replace the clay back onto the mold to dry. When the piece is bone dry it can be finished by either under glazing or over glazing. If under glazing use paint and fire the item. If over glazing is be to used, fire paint and fire the item again.

Draping a clay slab over newspaper former

Cutting away the excess clay

Modeling on details

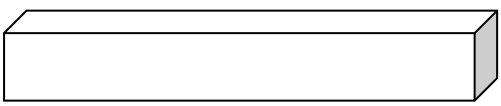
Lifting the model off the former to hollow out the nose from

STRIP CONSTRUCTION

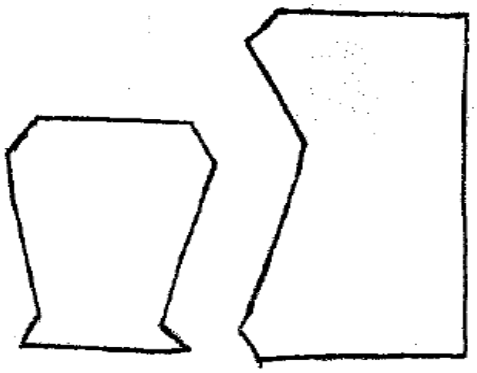
A method of making sculpture or large articles from slabs of clay that are rolled out ¼ inch thick and cut into long strips ¾ inch to 1 ¼ inches wide.

A. A flat base ½ inch thick is cut to the desired shape and strips of clay are built up on the slab base much like coil construction.
B. The strips are adhered to each other and all edges are smoothed even. If the article is to become gradually wider or narrower, the edges of the strips of clay are leveled (cut on a slant) to make them lay as desired.
C. Strips may slant outward and inward to build up a shape.
D. To keep finished article even all around, make a template of the silhouette desired for the finished article out of stiff cardboard. Hold the template up to the sides of the clay article every once in a while when adding strips.
E. Handles can easily be made from narrow (1/2” wide) strips of clay adhered onto the clay article while it is still damp.
F. When strips of clay are used for sculpture, they must be air dried just enough to still be bendable and yet firm enough to hold the shape they are bent into.

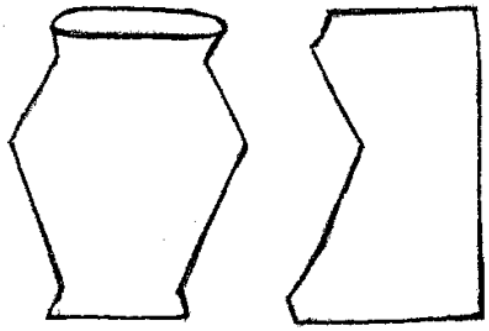
STRIP



For instruction in wheel thrown pottery, see other books or an instructor.



Template for pot in construction



Finished strip pot made from template as shown

DESIGNING TECHNIQUES

INCISING

Scratching lines into leather hard clay with a wire modeling tool or large nail. If glaze is to be applied to piece, make incising deep enough that lines will not fill up with glaze to the extent that the design no longer shows.

TEXTURING

Pressing small objects or ends of tools into semi leather hard clay making an imprint that is repeated to produce a texture.

SGRAFITTO

Incising done on a clay piece that has been coated with clay slip made from a contrasting color of clay (e.g. Indian red clay slip brushed thickly and evenly on an article made of white clay while the white clay article is somewhat moist). When the slip on the article dries just a little, designs can be incised into the contrasting slip, revealing the clay underneath. Care must be taken that the slip is not too dry, otherwise it will flake off; if it is too wet, the incision will be smudged. The selection of the tool will determine the quality of the line. A line must be made in a single stroke and then not touched again.*

ENGLOBE

Painting a design on a clay article at the leather hard stage with a contrasting color of slip. For best results, the slip should have flint, feldspar, and flux added. See advanced ceramics books for directions.*

SLIP TRAILING

Trailing a thin rope of a contrasting color of slip onto a damp article of clay using a small hand syringe or a catsup bottle. Allow a slip trailed design to dry slowly.*

* Be sure to purchase a glaze that will show up differently on the two colors of clay. The glaze need not be transparent, however.

PIERCING

Carefully cutting designs clear through the wall of a finished leather hard piece to create openings. Smooth cut edges of the opening with fingers, sponge, or a wire modeling tool. A sharp fettling knife works best for piercing. Ceramic supply shops will carry fettling knives.

ADD-ONS

Adhering/Score and Slip designs cut from thin slabs of clay onto a finished damp article. The edge between the add-on shape and the clay article should be smoothed so no cracks show.

WAX RESIST

The use of special water-soluble wax emulsions in conjunction with color oxides and stains. The color is absorbed into the dry clay where wax is not applied. Semi-transparent glazes are used over the pottery in the bisque state. This method is often used on wheel thrown pottery. See advanced ceramic books for more information.

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Trailing a thin rope of a contrasting color of slip onto a damp article of clay using a small hand syringe or a catsup bottle. Allow a slip trailed design to dry slowly.*

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Slip trailing using a rubber bulb

GLAZING

A glaze is a chalky-like mixture of raw chemicals that is used to coat articles of clay. The chemicals consist of glass or silicas which melt in firing. These fire into a solid body forming a glassy finish over the ware.

GLAZE TYPES

1. Transparent Glazes – Clear dipping, spraying, or brushing glazes are all transparent glazes. The clay body or the designs and color which were used in underglaze show through.

2. Semi-transparent Glazes – The clay shows somewhat through the glaze.
3. Opaque Glazes – Will not let the clay body show through.
4. Crystal Glazes – Glazes combined with crystals which melt in the firing to form interesting patterns.
5. Art Glazes – Glazes which break up in firing into a pattern or into multicolor effects.
6. Metallic Glazes – Glazes which take on a metallic look when fired. Glazes are available which look like wrought iron, lava, volcanic rock, etc.
7. Crackle Glazes – After firing, these glazes will break up into a controlled crazing producing a lacy design or an antique look, and are generally stained in the cracks to make the effect more apparent.
8. Opaque Underglaze – Paint which is used on greenware (raw clay), fired once and put "under glaze", then refired. This paint remains exactly where placed. It has no highlights on the edges. Being opaque, its primary use is all-over coverage.
9. Detail Underglaze – Paint designed for detail work on greenware or on an underglaze all-over color.
10. Transparent Underglaze – Concentrated color for designing on greenware or all-over color underglaze with freehand technique.
11. Overglazes – Overglazes consist basically of gold, silver, platinum, copper, and various lusters, marbelizers, and china paint. It must go over a form which has been glazed and fired.
12. Stains – A group of colors applied to ceramic objects which have first been bisque fired. No additional firing is necessary. Stains are to be used only on decorative items. They should not be confused with the finish obtained by using fired glazes.

CHOOSING A GLAZE

1. Each type of glaze comes in three basic finishes:
   A. Gloss
   B. Satin
   C. Matte
2. If the article you have made is to contain food or drink, be sure to buy a lead free (food safe) glaze.
3. Earthy tone glazes (tans as opposed to bright yellows, or rust and copper colors as opposed to bright reds and oranges) and glazes that do not have a high gloss are more appropriate for the "natural" look of hand-built pottery.
4. A different glaze may be used inside the piece from what is used on the outside, if desired. Be sure the two colors coordinate.
5. Most glazes show up differently on red clay than on white clay after they are fired. Make sure the sample of the glaze you are choosing has been done on the same color of clay you are using so you get the result you want.
6. Be sure to ask if the glaze you have chosen has a firing temperature that will work on the clay you are using.

APPLYING A GLAZE

Follow directions on the glaze bottle you purchase, especially for crystal glaze. The following directions apply to most glazes:

1. If the article has a flat bottom, do not glaze the bottom at all.
2. If the article has a rim at the bottom (called a foot), glaze everything but that rim.
3. Handle the glazed surface as little as possible.
4. Any glaze that has dripped onto the bottom of the piece must be cleaned off with a damp, not wet, sponge.
5. When the glazed piece no longer feels cold to the touch, it is ready to be glaze fired. Be sure the person doing the firing knows the maturing temperature for your glaze. This is the temperature to which your article must be heated. The temperature should be on the jar and will probably be described in cones (i.e. fire to cone 05). See advanced ceramic books if you want to know more about firing.
6. When glazing, remember to keep brush loaded. If brush drags, reload.
7. Don't backstroke. Backstroking is repeatedly painting an area.

METHODS OF APPLYING A GLAZE

Brushing – Applying glaze with a brush is the simplest method.

A. Glazes may be painted on ware with a medium brush, a method satisfactory for small pieces.
B. The article should have three coats of glaze brushed on, one right after the other, in even strokes in opposite directions – horizontally, vertically, and diagonally.

C. Apply glaze rather thickly except near the bottom of the piece.
D. A wide (3/4 inch to 1 inch) brush full of glaze works best.

Sponging – Glaze can be applied to ware with a soft sponge. This is a very easy and yet quite effective way of applying even coats of glaze. When using an underglaze, sponging gives a nice texture.

Pouring – Pouring requires less glaze than dipping, and the technique can be applied to a greater variety of shapes.

A. The only way to glaze the inside of a pottery shape with a narrow neck is to pour the glaze in, rotate the piece so that the whole inside surface is covered, and then pour out the excess, shaking the piece to make sure that all excess is removed.
B. The glaze should be a little thinner for this operation.
C. The operation must be done rapidly to avoid filling up too thick a coat or an uneven one.

*Dip Glazing – This is done by dipping the article into a bowl of glaze. Its chief drawback is that a rather large amount of glaze is required.

*Spraying – One of the most satisfactory ways to get an even coat of glaze on a piece. When glazes are sprayed, it is possible to achieve even graduations of tone. Spraying is a good way to glaze textured surfaces.

* For more information on the above methods, refer to a ceramic book or instructor. These methods are not recommended for the beginner.

GLAZE DEFECTS

A few of the more common glaze defects are:

Crazing – This occurs when a glaze shrinks more than the clay it is on. It shows up as tiny cracks on the surface of the piece. Sometimes these develop as soon as the piece is removed from the kiln; often they do not appear until several days or weeks later.

Crawling – When a piece comes out of the kiln with bare spots where the glaze has moved away from a portion, exposing the body underneath, the defect is called crawling. Crawling may be caused by dirt or oil on the surface of the piece when it was glazed, too thin an application, firing before the glaze dried, or sometimes, underfiring. A piece marred by crawling can be glazed again and refired.

Sandpaper Surface – A rough sandpaper-like surface indicates that the glaze was not put on thick enough.

Shivering – When sections of a glaze crack off after firing, the fault is called shivering. This is the opposite of crazing; the body has shrunk more than the glaze so that the glaze is under pressure.

GENERAL FACTS ABOUT GLAZES

1. Care should be taken never to get glaze mixture in the mouth. While it is not harmful to get glaze on fingers and hands, be sure to wash thoroughly when finished.

2. Glazing is most often done to an article of clay after the bisque firing.
3. Purchasing liquid glaze in small jars from a local ceramic store is the most convenient method.
4. The true color of a glaze is achieved only after the coated article is glaze fired.
5. Always stir glaze before using.
6. Sometimes the colored glaze of some ware may affect the glaze on other ware placed near it during the firing.
7. Many glaze defects may be corrected by reglazing and refiring. Glaze applied on fired glazed ware should be thick.
8. A thin piece of ware, after glaze has been applied to the inside, may be too wet to take any glaze on the outside. The outside should be glazed after the inside is dry.
9. When glazing sculpture, scrape off excess glaze in places where it may obscure the modeling (eyes, nostrils, hair, mouth, etc.).
10. Always read instructions on paint labels before beginning your project.
11. Always do backgrounds first on plaques or similar objects, flesh colors on figurines, etc.
12. Don't use underglaze if it pulls on the brush or is rough textured. Thin with water if too thick. Underglaze must be done smooth before firing, as it does not move in firing. This can be done by rubbing with fingers to smooth after each coat has dried.
13. Always remove dust particles from pieces before staining or glazing.
14. When staining, remember a little paint goes a long way. Always smooth out your paint before it dries; once it has dried, that is how it will look.

GLOSSARY

ADD-ON – A piece put on while article is still wet (example: handle).

AIRBRUSH – Small spray gun used for applying glaze, underglaze, or stains. Also used for shading and general decorating.

ANTIQUING – Removing applied color to accentuate detail.

BISQUE – Unglazed clay which has been fired once.

BONE DRY – Term used to describe clay that is completely dry, containing no moisture. The object should feel room temperature before it is ready to be fired.

CARVING – Sculptural method in which the clay is cut away from a mass to reveal a form inside – subtracts clay rather than adding on to achieve a finished product

CASTING – The process of filling a plaster mold with casting slip, thus creating A clay object form.

CASTING SLIP – Liquid clay for mold casting.

CERAMICS – Clay objects given permanent shapes by firing in a kiln.

CHALKS - A powder base used to dry brush over a stained or antiqued piece of bisque.

CLEAN UP TOOL – A tool used to clean greenware.

CRACKLETONE GLAZE – Name of glazes which have been specially formulated to produce a delicate crazed surface pattern.

CRYSTALS – Specially formulated colored glazes that have been fired and then ground to various sizes.

DECALS - Added to a glazed fired ceramic piece and then fired

DETAILED PORCELAIN - Painting eyes or anything small on ceramics.

DETAILING – Adding details such as facial features, small objects or fine details like flowers, designs, etc. free hand.

DRY BRUSHING – Put acrylic paint on the end of a round brush. Brush in a sweeping motion across a paper sack until you no longer see the paint on the sack. Then dry brush against the grain of your bisque. You will have to do this technique several times to achieve the color you want.

DRYFOOTING – Bottom area of article left unglazed so stilting is unnecessary. NOT recommended for utility items.

EMBELLISHMENT - To enhance or decorate a piece by slip trailing, sgraffito, piercing, texturing, or by adding decoration such as ribbons, beads, etc.

ENGLOBE – Colored slip or clay. Also the term used when decorating an unfired clay object with colored casting slip or liquid clay.

FIRING – The process of maturing ceramic products by various degrees of heat.

FLANGE – A coil or rib of clay added to a lid which keeps the lid located on its base.

FREE FORM - Having an irregular or asymmetrical shape or design

GLAZE – A finish which produces a glosslike surface when fired.

GLOSS GLAZE – A shiny glaze.

GOLD FIRING - A type of paint used for accenting

GREENWARE – An unfired clay object.

GROG – Ground up bisque added to clay to reduce shrinkage and add strength. Sometimes changes texture.

HUMP MOLD – Shaping a slab by draping it over a simple mold or pressing it into a hollow form – must be removed as clay begins to firm so clay does not adhere to mold

INCISE – To cut clay to create a design.

LEAD FREE GLAZE – Any glaze that is formulated without lead or cadmium compounds. Lead free glazes are perfect for use on dinnerware and utility items.

LEATHER-HARD – A term used to describe cast or hand formed clay items that are damp but firm enough to handle without losing shape.

MENDING – Repairing broken greenware or bisque.

MOLD – A hollow plaster of Paris form in which articles are reproduced through the use of liquid clay (slip).

MOTHER OF PEARL – A type of paint used to put over a clear glazed piece of bisque.

OPAQUE – Non-transparent color.

OVERGLAZE – A decorative finish fired on a glaze surface.

PIERCE – A design created by cutting through an article to create openings.

PINHOLES – A glaze defect caused by unfired bisque, dust left on ware or in the kiln, applying glaze to greenware, or by firing too rapidly.

POTTERS WHEEL – A device powered either by foot or by electricity which rotates a disk in a circular fashion so that an individual may manipulate clay into cylindrical vessels

POTTERY – Any article formed from clay.

RED STAIN – An acrylic or glaze used for painting ceramics. It does require working with to get your piece of bisque covered evenly.

ROLLING GLAZE – Method of covering inside area of ware by rolling thinned glaze inside, then pouring out excess. (See pouring under methods for applying glaze)

SCULPTURING - The process of adding, subtracting, carving a given material (i.e. clay) to create a three-dimensional work of art

SEAM – Ridge formed in greenware where mold pieces join.

SGRAFITTO – A method of creating a design by gently scratching through applied color to reveal the color on the clay body beneath it.

SHRINKAGE – Reduction in size of a clay object as a result of firing.

SLIP - Clay in liquid form.

SLIP TRAILING – Using slip in an applicator to flow on design.

STAGGER – To separate successive coats of glaze by fractions of an inch to prevent glazes from flowing together or from dripping off base of ware in firing.

STAIN – Decorative finish applied to soft bisque or used to accent pattern; is not refired.

STICK-ONS – Greenware parts added to main casting (example – handles to cups).

SUSPENSION – The state in which particles mixed with water are kept in equal distribution, preventing them from settling to the bottom of the container.

TEXTURE – Planned surface finish or roughness produced for interest.

THERMAL SHOCK – Subjecting the ware to abrupt changes from hot to cold or vice versa.

TRANSLUCENT – Transparent, allowing color underneath to show.

UNDERGLAZE – A ceramic color used under a glaze. Can withstand high temperatures. Used for painting designs on ware.

UTILITY ITEMS – Dinnerware, cups, canister set – functional rather than purely decorative items.

WOODTONE GLAZE – Trade name for stain glazes with tiny dark specks which form a wood-grain effect when brushed out.

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For more information and resources, consult your library or a ceramics/craft store