

Colorado  
State  
University

Extension

MG2800B  
Member's Manual



**Ceramics**  
**All Units**

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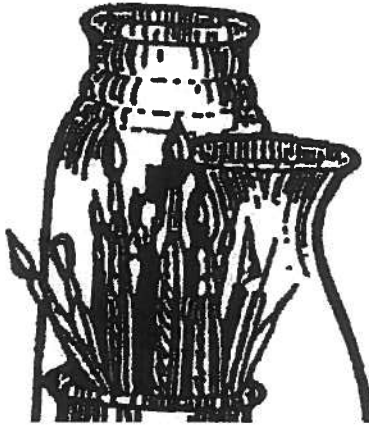
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# FUN WITH CERAMICS



## INTRODUCTION

**T**he history of ceramics dates back to prehistoric times. Primitive man pushed his finger into wet clay and formed an impression; this was a beginning of the present day sophisticated art of ceramics.

Dolls were originally made with ivory or wax, dating back to 600 B.C. An alternative of wooden dolls was developed in the 1800s. Porcelain dolls became popular in the early 19<sup>th</sup> century.

Cast Earthenware became popular in the United States slightly after World War II.

As a present day 4-H member, you will have the advantage of using “present day” tools and products to achieve your finished projects.

Being a 4-H member, you will be gaining knowledge. As you become involved, and help others, you will become a leader. As a leader you will find self satisfaction.

**Have fun!!!**

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# Requirements:

## Units 1 thru 4:

- (a) Complete two learning projects.
- (b) Complete one or more projects for exhibit consideration.
- (c) Include before and after pictures of projects that are altered in design.

## Units 5 and 6:

- (a) Complete one project. This is due to the degree of difficulty in these units.

## All Units:

- (a) All work **must be done by the member**, including the cleaning of greenware or soft bisque used in the Porcelain doll Unit.
- (b) **A member repeating any unit must learn new skills.**
- (c) Complete Ceramics e-Record.
- (d) Demonstrate a skill or skills learned.
- (e) Exhibit one finished project. One piece consists of no more than one item with lid (i.e., box w/lid). More than one piece is considered a set. Pieces in a set **must be related**.
- (f) **All ceramic pieces must be free for close inspection by the judge (i.e., flowers should not be fastened with floral clay in a flower pot. Doll's clothing must be easily removed).**
- (g) Completed Ceramics e-Record must be exhibited with the exhibit piece.

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# RECORDS:

- (1) Include a completed Ceramics e-Record (protected in a flat binder) with each unit exhibit.

Consult the Exhibit Requirements on the web at [www.colorado4h.org](http://www.colorado4h.org) for more details.

- (2) Information that may be included in your story:

- (a) Your name and age.
- (b) A little information about yourself.
- (c) What you liked most and/or least about doing your projects.
- (d) About difficulties you had in doing your projects, if any.
- (e) What you have learned about ceramics.
- (f) What you would like to learn next year.
- (g) What you and/or your club may have done for a community project.

- (3) Photographs of any of your projects are a nice addition to your records.

- (4) Be consistent. (i.e. If you start your records with a black ink pen continue with a black ink pen). You may use pen, pencil, typewriter or computer.

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## **Points to Remember:**

- Choose greenware with sharp detail and proper thickness.
- The ceramic clay body must be fired at a proper temperature to ensure proper maturity.
- Read labels on all containers for important information.
- Follow instructions closely.
- Follow the safety rules to prevent any health hazards and/or complications with your project.
- Keep accurate and neat notes to enter to your Ceramics e-Record supplement sheets.
- Any unit may be repeated with new skills learned.
- The unit criteria, for the unit in which you are enrolled, must be met.
- More than one unit may be completed in one 4-H year.
- The Ceramics e-Record must be completed per unit.
- **Be Creative!!! HAVE FUN!!!**

## **SAFETY RULES**

- ✓ **Do not have food and/or drink at your work area.**
- ✓ **Keep your hands away from your mouth and eyes.**
- ✓ **Do not blow clay dust from ceramic piece.**
- ✓ **Be sure your hands are clean before handling your piece.**
- ✓ **Always work in a well ventilated room when you are working with overglazes.**
- ✓ **Wear an apron to protect your clothing.**

SINCE



1902

# How to Clean Greenware

(Units 1 through 4)



**Step 1:** Your greenware piece must be bone dry. Wet or damp greenware can become polished which will repeal ceramic products. With the straight edge blade of the cleaning tool, gently scrape diagonally across the seam line. The seam line should be removed to follow the natural shape of the piece. Use the curved end of the tool to clean the indented and rounded areas.

**Step 2:** Brush away accumulated clay dust with a soft dusting brush. **Do not blow the dust.**



**Step 3:** Smooth the scratch marks made by the cleaning tool, and any surface imperfections with a medium grade grit. Use a circular motion, again, following the natural shape of the piece. You do not want to create flat areas. Remove accumulated dust with the dusting brush.

**Step 4:** Replace damaged detail with the curved end of the cleaning or a stylus tool. These lines will be sharp in contrast to the surrounding area. With a water dampen soft brush, soften the harsh lines.



**Step 5:** Container walls (cups, bowls, vase, etc.) must be of even thickness. Reduce the thicker areas from the inside of the opening with a medium grade grit. Be gentle!! To level the top edge of the opening, gently rotate the inverted object in a circular pattern on a piece of fine screen. The bottom of the piece may also be leveled in this manor. Be careful not to squeeze. Remove any clay drips from inside the container.

**Step 6:** Prepare a cup of tepid water with one teaspoon of vinegar. Vinegar water should eliminate hard spots that may appear. A hard spot is caused by a chemical build up in the mold that was used. The vinegar solution makes the greenware more porous. With a natural or



synthetic wet sponge (not dripping), lightly wipe over the piece (inside and outside) one time. If more corrections are needed, let the piece dry and repeat steps.

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## BRUSHES

Brushes are instruments made from animal natural hair, nylon and other man-made fibers. Most hair or bristles are bound together and fastened into a metal ferrule.

### **The brushes most often used:**

**Camel Hair:** These brushes can be made up from many different animals. The best Camel Hair brush is made up from the hair of squirrels. The Camel Hair brushes are generally soft and are mostly used for application of glazes and lustres. They are highly recommended for lustres because they allow these media to flow smoothly, without leaving apparent brush marks.

**Red Sable:** This type of brush is made from any one of the Asiatic mink or weasel hairs. They are one of the finest brushes and valued for brush work. Red Sable brushes are strong, springy and have fine points.

**Russian Sable:** The hairs are made up of the spotted American skunk and other polecats. It is some times referred to as a "fitch."

**Bristle:** Bristle brushes are made from a boar's or hog's body hairs. The finest quality bristles come from the hog's neck, which taper to a split end of several fine filaments.

**Glaze Brush:** This brush comes in Camel Hair, Red Sable, Ox Hair and Nylon. The sizes run from ¼" to 1-1/2". Nylon is recommended for Satin and Matt glazes because it applies these non-moving glazes smoothly.

**Fan Brush:** They come in various sizes and are highly recommended for Crystal type of glazes. Crystals have a tendency to go into the ferrule of the other brushes. It is very hard to determine if the crystals are completely out of the ferrule when the brush is cleaned. These crystals may slip out when another color is used. This ruins a finish.

**Square Shader:** Red Sable square shaders are full-bodied, sharp-edged, and resilient. They are most valuable for design work.

**Sabeline:** This brush is made from the tufts of silken hair found in the ears of cattle. They are strong and pointed, but do not have the ability to retain their shape.

**Blenders or Dusting Brush:** These brushes are made from badger hair and sometimes referred to as a badger brush.

**Stiff Bristle:** Mostly used to apply chalks, some oil base colors and to "scrub in" Opaque stains.

**Brushes are manufactured in a round or flat shape and vary in bristle length and fullness. They are made in several sizes (i.e. size 00000, the extremely fine brush to large ones, number 12 or 14).**

**To ensure a long life for your brushes thoroughly clean them, then shape and let them dry flat on a paper towel. Brushes that need to be cleaned in a turpentine base or other solvent cleaner, must always be cleaned with soap and water as a final cleaning.**

A brush should never be jammed



against the bottom of a container.

**Never leave your brush in the cleaning water.** The water will travel up the bristles onto the wooden handle and cause the finish to peel from the handle. It will also cause the brush to become deformed and it rarely will take shape again. If the brush is severely misshaped, after it is totally cleaned, shape it using styling hair gel. Then wrap it in foil and place it in the freezer for a few days.

It is important not to loan your brushes to others. Brushes used for brushstroke work form to your way of making brushstrokes. There is a possibility they might be returned improperly cleaned, which shortens the life of a brush.

When storing your brushes for any length of time, place a mothball with them. This prevents tiny insects from eating the glue in the ferrule, which will cause a loss of the brush hair.

**With proper care the brushes will last almost indefinitely.**

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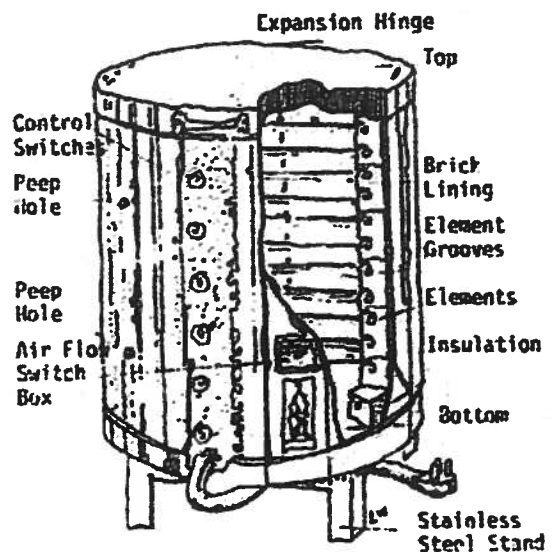
## FIRING

### Kiln:

Each kiln fires differently. The kiln operator often keep a log to determine how to fire and how to arrange the pieces in the kiln for best results. Kiln temperature is usually more intense near the top. Some colors of glazes “travel” while being fired. These pieces need to be fired on the top shelf. Floating or traveling flecks of glaze will float upwards and attach themselves to other glazes if they are fired on the lower shelves.

Most electric Kilns temperatures range from 1165 degrees to 2471 degrees. Each technique may require a different temperature firing.

Your leader will show you the firing chart that will show you the most recommended firing range.



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# Guide lines for judging your Units 1 - 4 projects

## Unit 1- Glazes

### **Creativity:**

Age, experience and technique used would be taken under consideration when measuring creativity.

### **Cleaning of greenware:**

There should not be any evidence of seam lines or imperfections.

The thickness on a cup or any container rim should be uniform.

All drip marks should have been removed from the inside.

The piece should sit evenly on the table.

There should be no obvious nicks, chip or rough area when clay lift, sgraffito or any greenware adaptation technique is used.

Any replaced detail should not be obvious.

### **Greenware:**

Deformed greenware caused in the casting should be avoided.

Good quality greenware with good detail should always be selected.

### **Appearance of the finished product:**

The total evaluation of greenware cleaning should be taken under consideration.

The glaze should not have pinholes. It should be clear (not cloudy). There should not be any unwanted crazes or cracks. The glaze should have an even application (no visible streaks).

There should be no starved (rough) areas or dust pockets (bare bisque patches).

If a design is used it should not appear too small or too large for the piece.

All vessels need to be finished inside.

The Bottom and/or the pour gate need to be finished.

### **Color Combination:**

The colors should not clash. The color wheel information on page 38 will help.

There should be enough contrast in the colors.

### **Bottom of piece:**

All stilt marks need to be removed. Stilt marks can scratch the furniture.

## Unit 2- Underglazes

### **Creativity:**

Refer to Unit 1 guidelines for judging.

### **Cleaning of greenware:**

Refer to Unit 1 guidelines for judging.

### **Greenware:**

Refer to Unit 1 guidelines for judging.

### **Appearance of the finished product:**

The total evaluation of the greenware cleaning should be taken under consideration.

The appearance of the underglaze should be even without streaks or blotches.

The underglaze should not have curled or peeled away from the surface.

Continue on next page.

**Appearance of the finished product continued:**

There should not be dust pockets where the underglaze or the glaze was rejected because of dust left on the piece when the medium was applied. This some times can be corrected by re-applying the medium and re-fire.

The glaze should be smoothed with out starved (rough) areas.

There should not be any unwanted cracks or pinholes in the glaze.

The underglaze should show brightly through the glaze.

If a design is used it should not be too small or too large for the piece. The design should be well centered.

All vessels need to be finished inside.

The bottom and/or the pour gate needs to be finished.

**Color Combination:**

Refer to Unit 1 guideline for judging.

**Bottom of piece:**

Refer to Unit 1 guideline for judging.

## Unit 3 - Overglazes

**Creativity:**

Refer to Unit 1 guideline for judging.

**Cleaning of greenware:**

Refer to Unit 1 guideline for judging.

**Greenware:**

Refer to Unit 1 guideline for judging.

**Appearance of finish:**

The total evaluation of the greenware cleaning should be taken under consideration.

Placement of decals should be centered and balanced. Decals should complement the glaze or underglaze colors if used. The decal pattern should not over power the piece.

Mother of Pearl should be bright, showing it was applied evenly. Brush strokes should not be apparent.

Gold should not show any purple, either in the design or on other areas of the piece.

The inside and bottom of a vessel must be finished with glaze. Drips, of metallics, inside or on the bottom of the piece may be taken under consideration.

The pour gate, if applicable, will need to be finished with glaze.

There should not be any dust pockets, starved areas, or unwanted crazes in the glaze.

**Color Combination:**

Refer to Unit 1 guideline for judging.

**Bottom of piece:**

Refer to Unit 1 guideline for judging.

## Unit 4 – Unfired Finishes

### **Creativity:**

Refer to Unit 1 guidelines for judging.

### **Cleaning of greenware:**

Refer to Unit 1 guidelines for judging.

### **Greenware:**

Refer to Unit 1 guidelines for judging.

### **Appearance of the finished product:**

The total evaluation of greenware cleaning should be taken under consideration.

The opaque colors should be very smooth and have a good coverage..

The colors should be well within the detail areas.

The opaque colors should be bright after antiqued with the oil or water base stain, not cloudy. This was caused by not cleaning enough antiquing from the embossed detail areas.

You should not see the bare opaque color inside the detail if the piece has been antiqued.

This was caused by too heavy coverage of antique.

The piece should not have rough areas due to insufficient sealer. The colors should not be cloudy due to heavy sealer coverage.

Eyes and/or animal nose and tongue should have a gloss sealer to give them a wet look.

Both eyes must look the same direction.

Design work should be well balanced and centered.

### **Color Combination:**

Refer to Unit 1 guidelines for judging.

### **Bottom of piece:**

Refer to Unit 1 guidelines for judging.

## Unit 5- Porcelain Dolls

Use the judging sheet (page 53) as a guideline.

## Unit 6 – Hand Constructed in Stoneware

Use the judging sheet (page 63) as a guideline.

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# UNIT 1 GLAZE

## Requirements:

(Refer to requirements Unit 1 - 4 on page 2)

## Basic Information:

### Glazes:

- (1) Are usually applied to bisque.
- (2) May be applied to greenware in certain cases. **Follow manufacturer's suggestions.**
- (3) Require specific application using the correct brush.
- (4) Require different temperature firing. **Always read manufacturer's labels for application and firing directions.**

### Types of most common Glazes:

- (1) Gloss (may be opaque, semi-opaque, transparent or semi transparent).
- (2) Art (may be gloss, satin or matte that breaks into two or more colors).
- (3) Crystal (may be gloss, satin or matte that has rock like crystals that melt in the firing).
- (4) Crackle (may be gloss, satin or matte). Antiqued with an ink thin, dark, stain to enhance crazes.
- (5) Satin (moves very little in firing).
- (6) Matte (does not move in firing).
- (7) Woodgrain (has a soft crystal that must be brushed out to give wood grain effect).
- (8) Textural (creates various textures from very fine to very coarse).
- (9) Special effect (is a "stay put" glaze that can be used under, over or between colored glazes).

*Have your project leader, parent and/or ceramic studio owner help you choose your greenware and glazes. They will be able to assist you in your choices and guide you.*

**Consult the Exhibit Requirements on the web at [www.colorado4h.org](http://www.colorado4h.org) for each unit.**

# PROJECT 1

## Basic Information:

- (1) Project 1 for the first year ceramist is designed to be a learning introduction.
- (2) *Project 1 for a member repeating Unit 1 is designed to be a progressive learning experience.*
- (3) This piece will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (4) In this project you will purchase your basic brushes, tools, greenware and paint. *Repeating members will need to learn the use of new brushes, tools and techniques.*
- (5) You will be learning many new ceramic terms from your leader and/or the glossary.

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# UNIT 1 GLAZE

## You are ready to begin!

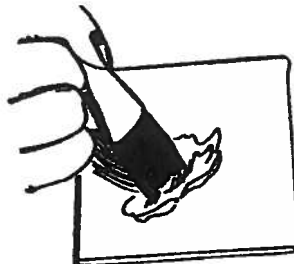
### Steps:

- (A) Purchase a 4 or 6 inch tile.
- (B) Prepare work area with suitable covering (i.e. newspaper, butcher paper, old towel, etc.).
- (C) **Follow the safety rules.** (Refer to page 3)
- (D) Clean tile using proper tools. (Refer to page 4)
- (E) Initial and date tile on the bottom for identification. This is a requirement.
- (F) *Senior and/or repeating members may leave the tile in greenware form and go to the next step.*
- (G) *With a pencil, divide the tile into 4 sections. Using a sgraffito tool incise the pencil lines. Be creative!!*
- (H) Bisque fire your tile according to the glaze label firing instructions.
- (I) Keep accurate notes as you proceed.

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- (J) Prepare your work area with suitable covering.
- (K) **Remember the safety rules.** (Page 3)
- (L) Using a damp sponge clean kiln dust from your tile.
- (M) *Senior/repeating members will choose two or more different glazes, (e.g. gloss, satin, matte, or crystal). Using your harmony color wheel, choose the colors you would like for your tile. Your leader will guide you.*
- (N) Apply recommended number of coats of glaze, as stated on the glaze label, on your tile. Be sure each coat is dry before applying the next coat. Be sure to glaze the bottom of your tile. The bottom of your piece should look as nice as the top. Your leader will guide in the application of glazes.
- (O) Have your piece fired to label recommended cone size.
- (P) Have stilt marks removed. After having the stilt marks removed, slide piece over a newspaper. If stilt marks scratch or tear the paper, you will need to remove the sharp edges again. You may want to use felt feet over the removed stilt marks. **Do not use full coverage of felt over the enter bottom.** The judge must have access to the bottom of pieces for close inspection.
- (Q) Judge your project using information on page 7 as a guide.
- (R) Complete the Ceramics e-Record supplement sheets.

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# UNIT 1

## GLAZE

### PROJECT 2

#### Basic Information:

- (1) Project 2 for the first year member will serve as a functional piece. You may use it as your water cup throughout your ceramic projects.
- (2) *Members repeating this unit may want to do a brush holder or another greenware piece of his/her choice. Be creative!!!*
- (3) This is a required learning piece.

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#### Suggestions:

*For senior and repeating members:*

- (1) *Try design work by using glazes over a Matte or Satin glaze. This is called a Majolica technique.*
- (2) *Seek more techniques from ceramic publications and/or your local ceramic studio.*

#### Steps:

- (A) Prepare work area.
- (B) **Remember the safety rules.** (Refer to Page 3)
- (C) Carefully clean seam lines from your greenware with proper tools. The circumference of the cup lip must be the same width. This is accomplished as you smooth the rim.
- (D) Have your piece fired according to the label instructions.
- (E) Keep accurate notes as you proceed.

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- (F) Prepare work area.
- (G) After cleaning your bisque with a damp sponge, roll one "rolling coat" of glaze inside your piece. Your leader will help you mix your glaze for a rolling coat. Be sure to leave your piece upside down until dry, resting the rim of the piece on a clean cleaning tool or pencil. This will avoid over glazing the inside. Continue by glazing the outside and bottom. Do not over - lap your outside glaze onto your inside glaze. It will cause the glazes to bleed into each other. Be sure each coat is dry before beginning your next coat. You may use the same color/s as you used on the tile.
- (H) Fire according of the label instructions.
- (I) Remove the stilt marks on your piece.
- (J) Enter information on your Ceramics e-Record project and expense supplement sheets.

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# UNIT 1

## GLAZE

### Project 3

#### Basic Information:

- (1) **GREAT!!!** You have completed projects 1 and 2.
- (2) Skills learned:
  - (a) Proper cleaning of greenware.
  - (b) Application of glaze of your choice.
  - (c) Rolling glaze inside a piece.
  - (d) Butting (or meeting) two glazes.
- (3) You are now ready to complete project 3 which may be your exhibit piece.
- (4) If time permits you can complete several projects. You may want to do an evaluation on each of your pieces that are exhibit consideration. This would let you determine which would be your best piece for exhibit.

#### Suggestions:

- (1) You may use the same skills learned on your third project or refer to Ceramic Knowledge and Goals checklist to learn and complete a new skill.
- (2) Before choosing your project 3 piece, and if you have the opportunity, go to several ceramic studios to see what is available.
- (4) Look through ceramic publications for technique ideas. Check references on page 70.
- (5) Be sure to stay within your unit medium, (Glaze).
- (6) You may want to change your piece by carving a design into the dry greenware or by cutting a design into wet greenware. You may change the design of your piece as you like. This is considered a greenware adaptation, but is still within your unit if you use glaze as your medium. Be sure the greenware is casted a little heavier than normal. Extra care will be needed because there is a degree of risk in breakage. **This is not recommended for ages 9 thru 13 years, but would be an excellent technique for senior members.**

#### Steps:

- (A) Follow cleaning steps as outlined on page 4.
- (B) Decide on the technique you wish to achieve. Your leader will guide you. If you do not have a ceramic project leader, contact your Extension Agent so he/she may be able to connect you with a local project leader or a knowledgeable person. If neither is available, see if the Ceramic Leaders manual is available for more advanced information.
- (C) Keep accurate notes as you proceed.

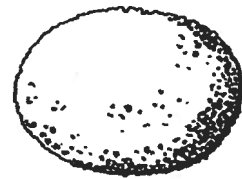
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# UNIT 1 GLAZE

## CERAMIC KNOWLEDGE

## CHECK LIST:

Identify the following tools/brushes:



What I learned about the care of my ceramic brushes: \_\_\_\_\_

**Congratulations!!** By completing 3 or more projects, exhibiting Ceramics e-Records and one project you have completed this year's Unit.

# UNIT 1 GLAZE

Ceramic Knowledge and Goals checklist:	New skills I have learned.	Skills I want to learn or improve.
Removing seam lines and imperfections, from the greenware, with the proper tools.		
Altering the greenware pattern for a special effect.		
Application of an Opaque gloss glaze with an Ox hair or Nylon glaze brush.		
Application of a Semi-Opaque gloss glaze with a Nylon glaze brush.		
Application of a Transparent and/or Semi-Transparent glaze with a Nylon glaze brush.		
Application of an Art gloss glaze with an Ox hair or Nylon glaze brush.		
Application of an Art Satin and/or Matte glaze with a Nylon glaze brush.		
Application of a Crystal Gloss, Satin and/or Matte glaze/s with a Fan brush.		
Application of Crackle Gloss, Satin and/or Matte glaze/s with a nylon brush.		
Application of Woodgrain Satin and/or Matte glaze/s with an Ox hair or Fan brush.		
Application of a Textural glaze using a brush, paint knife, sponge or other instruments.		
Application of a Special Effect glaze using a brush. paint knife, sponge or other instruments.		
Antiquing with glazes.		
Application of a combination of different color glazes, one over another, for a mingled or multi-colored effect.		
Application of a combination of different color glazes, a deliberate placement of colors, controlling the colors.		
Application of glaze contained within a design area (i.e. a figurine with different colored areas).		
Sgraffito through glaze/s using two or more glaze colors.		
Inlay of glazes into certain areas of pattern (i.e. a Mosaic).		
Majolica: A glaze decoration over a Matte or Satin glaze. <u>Limited amount of underglaze for out lining only will be accepted.</u>		

**Put the date when you learned the skills. Place a check mark in the column of skills you would like to learn. Discuss skills you would like to learn with your leader. She/he will be able to give you hints as how to achieve your goal.**

**Check the glossary for more information on each of the skills.**

# UNIT 2

## UNDERGLAZE

### Requirements:

(Refer to requirements Unit 1 - 4 on page 2)

### Basic Information:

#### Underglazes:

- (1) Are usually applied to greenware and fired before glaze is applied.
- (2) May be applied to bisque (but rarely done because of difficulty in application and poor end results). This is not recommended unless underglaze label suggest this type of application.
- (3) May be thinned, with underglaze media or water, for desired consistency.
- (4) May be intermixed to create color variations. Refer to types of underglazes.
- (5) May be applied with brush, sponge, airbrush or a variety of other available tools.
- (6) May be used in a sgraffito technique.
- (7) Must be applied smoothly because they do not move in firing.
- (8) Require specific cone firing as indicated on underglaze label.

#### Types of the most common underglazes:

- (1) Opaque underglaze is usually made from a clay base, and should not be mixed with different kinds of underglaze, or any of the glaze types. It is mostly used for solid coverage, and can be thinned with underglaze medium or water.  
This type of underglaze works well for:
  - (a) Figurines.
  - (b) Blocking in design work (i.e. as eyes, flower petals, etc.).
- (2) Transparent underglaze is made with concentrated colorants, and less clay base. It is usually thinned with an underglaze medium or water.  
This type of underglaze works well for:
  - (a) Brush stroke work.
  - (b) Tinting specialty glazes (i.e. Froth, Snow, etc.).
  - (c) Airbrushing.
- (3) Specialty underglaze is usually made with a frit base. It can be mixed with its own kind. Very rarely can it be mixed with other ceramic media. The most popular colors in this type are red and orange. It is recommended to follow the manufacturer's instructions for proper application.

There are new and improved ceramic media introduced daily. **It is very important to read all labels for recommended application and firing instructions.**

*Have your project leader, parent and/or ceramic studio help you choose your greenware and underglazes. They will be able to assist you in your choices and guide you.*

\*\*\*\*\*

# UNIT 2

## UNDERGLAZE

### PROJECT 1

#### Basic Information:

- (1) This project will be a lesson in making basic (human) eyes.
- (2) First year members in Unit 2 will use a tile for this learning experience.
- (3) *Repeating members and seniors may use any plain surface piece.*
- (4) This project will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (5) You may be using tools, brushes, and a glazed tile from Unit 1.
- (6) Other tools and brushes you may need to purchase:
  - (a) Sgraffito tool.
  - (b) Round brush (#2 or #4).
  - (c) Liner brush (#1).
- (7) You will learn more new ceramic terms from your leader and/or the glossary (page 65).
- (8) Keep accurate notes as you proceed.

#### (Eyes for you)



Looking to one side

Looking straight ahead

**Both eyes must look the same direction.**

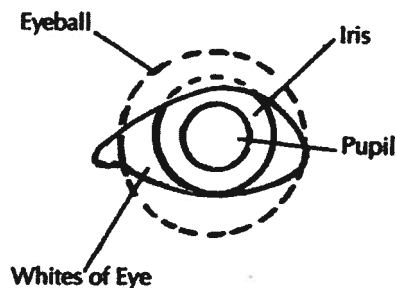


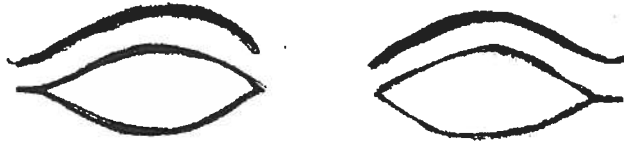
Illustration by Sharon Kinzie

# UNIT 2

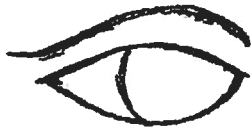
## UNDERGLAZE

### Steps:

- (A) Select suitable greenware (tile or any flat surface piece).
- (B) Prepare work area with suitable covering.
- (C) **Follow the safety rules.** Refer to page 3.
- (D) Clean greenware as outlined on page 4. Initial and date the bottom of piece for identification.
- (E) After you have checked your piece for seam lines and imperfections, wipe the piece down with a damp sponge to remove the excess dust .
- (F) Place opaque flesh color underglaze on a glazed tile (your work tile).
- (G) Apply even coats with a one inch nylon glaze brush over entire piece.  
Read label for number of coats recommended. Let your piece dry completely.
- (H) Using a dull pencil, lightly sketch in three sets of human eye shapes. Also, you may place tissue wrapping paper over the eye illustration and trace the out-lines, using a dull pencil. Place the pattern on your piece and trace with a "Extra Fine Pilot pen". The ink will go through the tissue and leave the out-line on your piece. **You must use a pilot pen when doing this.**
- (I) Block inside the eye with 3 coats of opaque white underglaze using a Round brush. Let your piece dry completely.



- (J) Sketch in the iris (the colored part of the eye) using a dull pencil. Refer to the illustrations for the placement of the iris.



Looking right.



Looking Left.



Looking straight ahead.

# UNIT 2

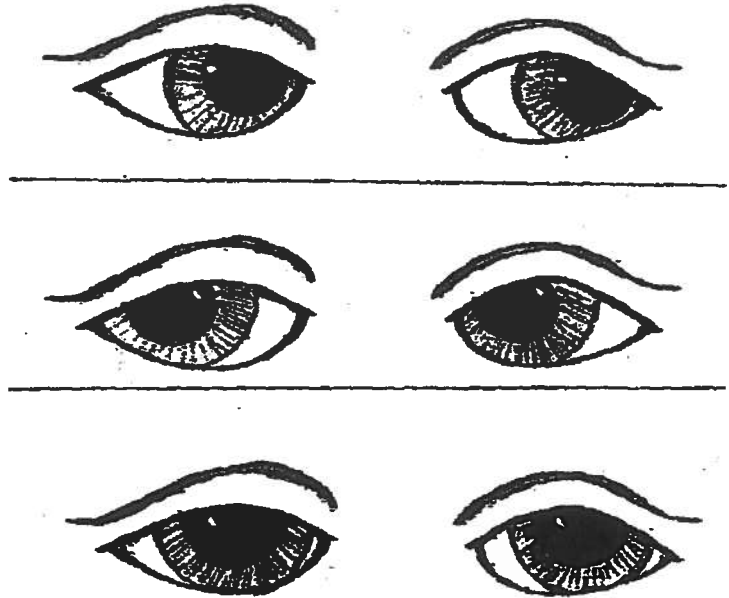
## UNDERGLAZE

### Steps Cont:

- (K) Paint in the iris with 3 coats of desired opaque underglaze color using a Round brush (i.e. Blue or brown tones). Let your piece dry completely.
- (L) Using the dull pencil, sketch in the pupil (black part of the eye). Refer to the placement of pupil from the illustrations below. Notice that the pupil is placed toward the top of the eye. The eyelid covers about  $\frac{1}{4}$ <sup>th</sup> of the eye.

Be sure to place the highlights on the same side of each eye.

The highlight is the reflection of light in the eyes.



- (M) Place the highlight in the eyes with white opaque underglaze with a Liner brush.  
*The members who are repeating Unit 2 and seniors may sgraffito through damp underglaze into greenware to indicate highlights.*  
Be sure to place the highlights on the same side of each eye.
- (N) With the liner brush and black underglaze place a line over eyes for lashes.  
*Repeating members and seniors may brush in the individual lashes.*
- (O) You may want to put a dot of pink in the tear duct area.
- (P) Clean brush with soap and water. Rinse and reshape the brush.
- (Q) Have the piece fired to the proper cone.

\*\*\*\*\*

- (R) Prepare work area.
- (S) After cleaning the piece with a damp sponge apply two coats of clear glaze.
- (T) Clean the glaze brush with soap and water. Rinse and reshape the brush.
- (U) Fire to the proper cone.
- (V) Remove stilt marks.
- (W) Complete your Ceramics e-Record project and expense supplement sheets.
- (X) Evaluate your project using the Unit 2 guide line for judging on pages 7 and 8.

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# UNIT 2 UNDERGLAZE

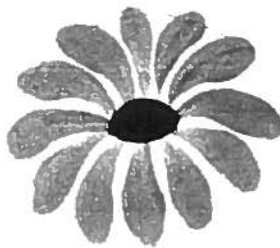
## PROJECT 2

### “Please Don’t Eat the Daisies”



#### Basic Information:

- (1) Project 2 is a brush stroke study using translucent underglazes.
- (2) Learning brush strokes is similar to learning to play a musical instrument. You may want to practice the basic brush strokes, on paper or on a clear polypropylene sheet protector, until you feel comfortable to apply your learned skill on your piece. Try designing several Daisy patterns on paper to practice the brush stroke.
- (3) This project will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (4) You may need to purchase a Round brush (#4 or #6).



Brush stroke illustration

**Place a polypropylene sheet protector over the brush stroke illustrations and practice the brush strokes. After you fill the page, just wash the protector off and repeat the process. Remember that you do not need to stay within the boundaries of the detail. This is known as “free brush”. Perseverance is very important and the reward comes with your sense of accomplishment.**



# UNIT 2

## UNDERGLAZE

### Steps:

- (A) Select suitable greenware (i.e. box, small vase or plate).
- (B) Prepare work area.
- (C) **Follow safety rules.** (Page 3)
- (D) Clean greenware with proper tools (Initial and date the bottom of piece/s for identification).
- (E) After you have checked for seam lines and imperfections, remove excess dust from your piece using a damp sponge.
- (F) Trace or sketch a Daisy pattern on to the piece (if making a box, use the box lid).  
*Members repeating this unit or seniors may want to design their own pattern.*
- (G) Wash the new brush with soap and water. Rinse the brush and reshape.
- (H) Place a translucent yellow underglaze on your work tile.
- (I) Dilute the underglaze, with underglaze medium or water, to a canned milk consistency.
- (J) Rinse brush again and shape by pulling the brush across a paper towel.
- (K) With a well loaded brush start at the top of the petal and use a point, pressure and pull back to a point brush stroke. In doing this, you are creating a “fat rounded” top, with pressure. You are then easing the presser to form the more narrow part of the petal, and ending by pulling the brush from the object to make the final point.  
A delicate hand is better than a heavy hand. With practice you will learn how much pressure to put on your brush. Keep turning your piece so you are pulling your brush stroke toward yourself. You may need to rinse your brush and thin your underglaze often.
- (L) Clean the work tile well. Dilute a orange yellow translucent underglaze to a canned milk consistency.
- (M) Using the handle end of the detail brush, fill the center (the calyx) with dots of orange yellow.
- (N) Place yellow green translucent underglaze on your clean glazed work tile and dilute to a canned milk consistency.
- (O) Fill in the leaves using the same brush strokes as used on the petals.
- (P) Dilute a small amount of black green translucent underglaze on the clean work tile. Thin to light cream consistently.
- (Q) Using a #1 liner outline petals and leaves. Place dots inside calyx. Refer to illustration for placement. Paint stem from flower downward toward bottom.  
Using the liner brush put your name or initials beside your daisy. When making fine lines, your brush must be vertical. As you use very little pressure on your brush, you will be able to make nice thin lines.
- (R) Clean the brush and reshape.
- (S) Fire to the proper cone (Be sure to have the box lid fired onto box bottom).

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# UNIT 2

## UNDERGLAZE

- (T) Prepare working area.
- (U) After cleaning the piece with a damp sponge, apply two coats of clear glaze. Be sure the piece is dry before applying the second coat.
- (V) Clean your brush and reshape.
- (W) Fire to proper cone.
- (X) Complete your Ceramics e-Record project and expense supplement sheet.
- (Y) Evaluate your project using the Unit 2 guide line for judging on pages 7 and 8.

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Colors and pattern for project 2 are suggestions only. You may want to design your own pattern and/ or choose different colors. Be creative!!

**The secret to brush work is learning to relax and to control the brush. The more you practice the more you will relax and your brush strokes will improve.**



Brush work illustration

# UNIT 2

## UNDERGLAZE

### PROJECT 3

#### Basic Information:

- (1) **Magnificent!!** You have completed projects 1 and 2.
- (2) Skills Learned:
  - (a) Application of opaque and translucent underglazes.
  - (b) Making Human eyes.
  - (b) Basic Brush strokes.
- (3) You are ready to complete project 3 which may be your exhibit piece.
- (4) This will be your “design and create” piece. You may use the skills you have learned or apply a new skill (Refer to the Ceramic Knowledge and Goals List for ideas).
- (5) If time permits you can complete several projects.
- (6) Evaluate your piece using the Unit 2 guideline for Judging on pages 7 and 8.

#### Suggestions:

- (1) Before choosing your piece, and if you have the opportunity, go to several ceramic studios to see what is available.
- (2) Look through ceramic publications for technique ideas. Check references on page 70.
- (3) Be sure to stay within your unit medium (underglaze).
- (4) You may want to change your piece by alternating the design of the greenware (Greenware adaptation).

#### Steps:

- (A) Follow cleaning steps as outlined on Page 5.
- (B) Decide on the technique you wish to achieve. Your leader will guide you. If you do not have a ceramic project leader, contact your Extension Agent. He/she may be able to connect you with a local leader or a knowledgeable person. If neither is available, check to see if there is a Ceramics Leaders’ manual available for more advanced information.



# UNIT 2 UNDERGLAZE

## CERAMIC CHECK LIST:

Identify the following tools/brushes and brush stroke:



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What I learned about the care of my ceramic brushes: \_\_\_\_\_

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What I learned in this unit:

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**Well Done!!** By completing 3 or more projects, exhibiting Ceramics e-Records and one project you have completed this year's Unit.

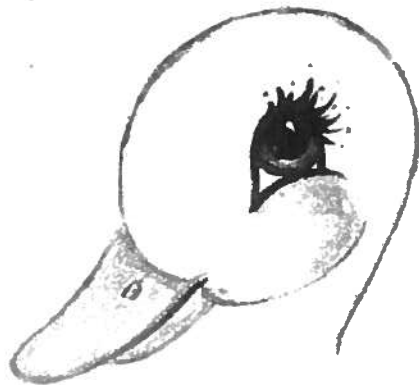
# UNIT 2

## UNDERGLAZE

CERAMIC KNOWLEDGE AND GOAL CHECKLIST:	New skills I have learned.	Skills I want to learn or improve.
<u>Altering the greenware pattern for a special effect.</u>		
<u>Detail work</u> with Opaque underglaze on an embossed piece (using a figurine or highly detailed piece).		
<u>Antique</u> with underglazes (usually with a detailed piece) .		
<u>Polish</u> with Opaque underglazes (Southwest Indian technique that has been passed down for generations).		
<u>Texture</u> technique (using thickened Opaque underglaze to form a textured pattern or background).		
<u>Veiling</u> technique (designing work using Translucent underglaze and a sponge).		
<u>Sgraffito</u> technique (scratching a design through an underglaze).		
<u>Stencil</u> technique (a cut out pattern used to apply a design by brushing, sponging or air brushing).		
<u>Brush work</u> with Transparent underglaze (a design where the strokes of the brush are apparent).		
<u>Simulated China painting</u> (using Transparent underglazes, double and triple loading the brush with several colors to give a feeling of China painting).		
<u>Majolica</u> (underglaze design applied over Satin or Matte glaze).		
<u>Air Brush</u> (a device generated by an air compressor). Solid coverage can be achieved, as well as design work and subtle shading.		

**Put the date when you learned the skills. Place a check mark in the column of skills you would like to learn. Discuss skills you would like to learn with your leader. She/he will be able to give you hints as how to achieve your goal.**

**Check the glossary for more information on each of the skills.**



Artwork by Sharon Kinzie

# UNIT 3

## OVERGLAZE

### Requirements:

(Refer to requirements Unit 1-4 on page 2)

### Basic Information:

#### Overglazes:

- (1) Are usually applied over a glaze.
- (2) May also be applied over polished Porcelain bisque.
- (3) Are mostly used for decorative purposes. Most overglazes, fuse to, but do not become part of the glaze. For that reason, they are mainly used for decorative rather than utility items. **Check with the manufacturer for food safe information.**

#### Types of the most common overglazes:

- (1) Lustres:
  - (a) Gold
  - (b) Platinum
  - (c) Copper
  - (d) Mother of Pearl
- (2) Decals
- (3) Enamel
- (4) China paste
- (5) China paint



**It is very important to read all labels for recommended application and firing instructions.**

*Have your project leader, parent and/ or ceramic studio help you choose your greenware and overglazes. They will be able to assist you in your choices and guide you.*

Keep accurate notes as you proceed.

Evaluate each of your projects using the guide for judging on page 8.

# UNIT 3

## OVERGLAZE

### PROJECT 1

#### Basic Information:

- (1) You will be learning how to apply a decal and Mother of Pearl.
- (2) Most decal designs are made with China paint and/or enamels on a film. The film fires away and the design fuses onto the glaze.
- (3) If using decals and Mother of Pearl on the same piece, always apply and fire the decal first. Decals require a hotter firing than the Mother of Pearl.
- (4) *Repeating members and seniors may create an original design using a variety of different patterns and sizes when using decals.*
- (5) This project will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (6) You may be using some of the tools from Unit 1 and Unit 2.
- (7) Other tools and brushes you may need to purchase:
  - (a) Squeegee for applying decals.
- (8) You will learn more new ceramic terms from your leader.

#### Steps:

- (A) Select suitable greenware (tile or any smooth surface piece).
- (B) Prepare work area with suitable covering.
- (C) **Follow the safety rules.** Refer to page 3.
- (D) Clean greenware as outlined on page 4. Initial and date the bottom of the piece.
- (E) Have your greenware fired to the proper cone size.
- (F) Keep accurate notes as you proceed .

\*\*\*\*\*

- (G) Prepare work area.
- (H) After cleaning the kiln dust from the piece, apply gloss glaze of your choice, with your glaze brush.
- (I) Clean your brush with soap and water. Rinse and reshape the brush.
- (J) Fire your piece to the proper cone size.

\*\*\*\*\*

- (K) Prepare work area.
- (L) Clean the tile to be decorated, and the work tile, with denatured alcohol.
- (M) Place the decal in water until decal curls up tightly. The water should be room temperature or luke warm.
- (N) Remove the decal from the water and place on the cleaned work tile until the decal unfurls.
- (O) With the backing paper still in place, position the decal face up on the piece. Holding the decal in position with your thumb, gently slip out the backing paper.

# UNIT 3

## OVERGLAZE

- (P) If you are having a problem, removing the backing paper, ask your leader for helpful suggestions.
- (Q) Slide the squeegee over the backing paper to remove some of the adhesive. This will let the squeegee slide across the decal without tearing it. Work out all of the water and air bubbles, working from the center out, in all directions.
- (R) Clean the squeegee with soap and water, rinse and let it dry.
- (S) Allow decal to dry twelve hours before firing. Read decal packaging for proper firing cone.
- (T) Check the stilt marks and remove as needed.
- (U) Complete your E-record and expense supplement sheets.
- (V) Evaluate your project using the Unit 3 guideline for judging on page 8.

\*\*\*\*\*

### Steps for Mother of Pearl:

- (A) **Wash the new brush with soap and water, at home, so it has time to dry before the next workshop. Label your brush "Mother of Pearl".**
- (B) Prepare work area.
- (C) Clean the glazed project piece, the work tile, and the camel hair round brush with the denatured alcohol and let dry.
- (D) Wear rubber gloves or use paper towel while placing the piece on a turntable.
- (E) Load the round camel hair brush with Mother of Pearl, clean one side of the brush on the side of the bottle, to remove excess. **The brush should not be loaded to the metal ferrule.**
- (F) With a light touch, swirl the Mother of Pearl in a small circular motion. Turn the turntable as you work. Reload your brush when needed. **Do not over-work the brush strokes.** Let the piece dry twelve hours before firing to proper cone (follow manufactures instruction). Be sure to use paper towels or wear gloves when moving the dry Mother of Pearl piece. Ask your leader to give you more information if needed.
- (G) Clean your brush in clean essence, then alcohol and finally with soap and water. Store this brush, alone, away from your other brushes.

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- (H) Check the stilt marks and remove as needed.
- (I) Complete your E-record.
- (J) Evaluate your project using the Unit 3 guideline for judging on page 8.

\*\*\*\*\*

## PROJECT 2

### Basic Information:

- (1) You will be learning how to apply Mother of Pearl.
- (2) If using decals and Mother of Pearl on the same piece, always apply and fire the decal first. Decals require a hotter firing than the Mother of Pearl.



# UNIT 3

## OVERGLAZE

- (3) This project will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (4) You may be using some of the tools from Unit 1 and Unit 2.
- (5) Other tools and brushes you may need to purchase:
  - a. Turntable to aid you when you are applying lustres
  - b. Deerfoot Stipler brush designed to be used with Mother of Pearl. If not available, camel hair round brushes may be used.

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### Steps:

- (A) Select suitable greenware.
- (B) Prepare work area with suitable covering.
- (C) **Follow the safety rules.** (Refer to page 3)
- (D) Clean the greenware as outlined on page 4. Initial and date the bottom of the piece.
- (E) Have your greenware fired to the proper cone size.
- (F) Keep accurate notes as you proceed.

\*\*\*\*\*

- (G) Prepare work area.
- (H) After cleaning the kiln dust from the piece, apply gloss glaze or glazes of your choice depending on your piece, with your glaze brush.
- (I) Clean your brush with soap and water. Rinse and reshape the brush.
- (J) Fire the piece to the proper cone size.

\*\*\*\*\*

- (K) **Wash the new brush with soap and water, at home, so it has time to dry before the next workshop. Label your brush "Mother of Pearl".**
- (L) Prepare work area.
- (M) Wear rubber gloves or using paper towels when working with your piece.
- (N) Clean the glazed piece, the work tile, and the deerfoot stipler or the camel hair round brush with denatured alcohol and let dry.
- (O) Wearing rubber gloves or using paper towels place the piece on a turntable.
- (P) Load the deerfoot stipler or camel hair brush with Mother of Pearl. Clean one side of the brush on the side of the bottle, to remove excess. **The brush should not be loaded to the metal ferrule.**
- (Q) With a light touch, swirl the Mother of Pearl in a small circular motion. Turn the turntable as you work. Reload your brush when needed. **Do not over-work the brush strokes.** Let the piece dry twelve hours before firing to proper cone (follow manufacture's instruction). Be sure to use paper towels or wear gloves when moving the dry Mother of Pearl Piece. Ask your leader to give you more information if needed.
- (R) Clean your brush in clean essence, then with denatured alcohol and finally with soap and water. Store this brush, alone, away from your other brushes.

# UNIT 3

## OVERGLAZE

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- (S) Check the stilt marks and remove as needed.
- (T) Complete your E-record project and expense supplement sheets.
- (U) Evaluate your project using the Unit 2 guideline for judging on page 8.

\*\*\*\*\*

### PROJECT 3

#### Basic Information:

- (1) **Fabulous!!** You have completed projects 1 and 2.
- (2) You are ready to create your project 3 which may be your exhibit piece.
- (3) The skills learned, in this unit:
  - (a) Decal application.
  - (b) Application of Mother of Pearl.
- (4) You may use one of these skills by themselves or in combination. If you are having a hard time deciding, ask your parent, leader, or local ceramic studio for advice. .

#### Suggestions:

- (1) Before choosing your piece, and if you have the opportunity, go to several ceramic studios to see what is available.
- (2) You may want to change your piece by alternating the design of the greenware (Greenware adaptation).
- (3) Refer to ceramic publications and websites for technique ideas. Check references on page 70.
- (4) You might want to obtain information from your local library.
- (5) Be sure to stay within your unit medium (Overglaze).

#### Steps:

- (A) Follow the cleaning steps as outlined on page 4.
- (B) Decide on the technique you wish to achieve.
- (C) Complete Ceramics e-Record. Include Learning Projects on the specific information page:
  - 1. Proper application of decals.
  - 2. Proper application of Mother of Pearl.
- (D) Evaluate your piece using the Unit 3 guideline for judging on page 8. Ask your leader for help.

# UNIT 3 OVERGLAZE



## CERAMIC CHECK LIST:

Identify the following tools and brushes:

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What I learned about the care of my ceramic brushes:

# UNIT 3 OVERGLAZE

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What I learned in this unit:

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**Good for you!!** By completing 3 or more projects, exhibiting E-records and one project you have completed this year's Unit.

<b>CERAMIC KNOWLEDGE AND GOALS CHECKLIST:</b>	New skills I have learned.	Skills I want to learn or improve.
Altering the greenware pattern for a special effect.		
Making my own design using several decals.		
Combining several overglazes.		
Application of Enamels.		
Application of China Paste.		
Application of China Paint.		
Application of an Overglaze not listed. Name of Overglaze:		

**Put the date when you learned the skills. Place a check mark in the column of skills you would like to learn. Discuss skills you would like to learn with your leader. She/he will be able to give you hints as how to achieve your goal.**

**Check the glossary for more information on each of the skills.**

# UNIT 3

## OVERGLAZE



# UNIT 4

## UNFIRED FINISHES

### Requirements:

(Refer to requirements Unit 1-4 on page 2)

### Basic Information:

#### Unfired finishes:

- (1) Are commonly referred to as “stains”.
- (2) Are usually restricted to decorative pieces.
- (3) Are more suitable for earthenware bisque but some may be applied to porcelain.
- (4) Require only one bisque firing, with the exception of pieces that are to be glazed inside to hold liquid (i.e. vases, pitchers, planters, etc.).
- (5) Are best applied on, highly detailed, utility pieces (i.e. vases, pitchers, planters, etc.), bisque fired to cone 05, or to decorative pieces (figurines) bisque fired to cone 06.
- (6) Are “forgiving”. If you do not accomplish what you wish, the unfired finishes may be fired away. You then can remove residue and resume staining your piece.
- (7) Are usually polished or sealed with a fixative (follow manufacturer’s suggestions).

#### Types of most common unfired finishes:

- (1) Opaque is a water base stain that you are unable to see through (solid coverage).
- (2) Translucent is used for antiquing, rouging, high lighting, shadowing and simulated china painting.  
Types of Translucent stains are:
  - (a) Water base
  - (b) Oil base
- (3) Pearl simulates a mother of pearl effect. Pearls may be:
  - (a) Opaque
  - (b) Translucent
- (4) Metallics produce a “metal like” appearance. Types of unfired metallics are:
  - (a) Powder
  - (b) Oil base
  - (c) Wax base
  - (d) Varnish base
  - (e) Water base
- (5) Lustres are translucent which produces an iridescent sheen when applied over opaque colors or to bisque ware.
- (6) Chalk produce a china painted porcelain look. It should be applied over sealed earthenware or polished porcelain.
- (7) Gold Leaf is gold beaten into an extremely thin sheet. It is applied with an adhesive, usually to bisque.
- (8) Sculpture Paste or Powder may be mixed with opaque stain for a color build-up technique. It is more suitable for earthenware.

# UNIT 4

## UNFIRED FINISHES

Before beginning your projects, try your skill at mixing colors. Having knowledge of “color mixing” is very important. You will be amazed at what you can achieve.

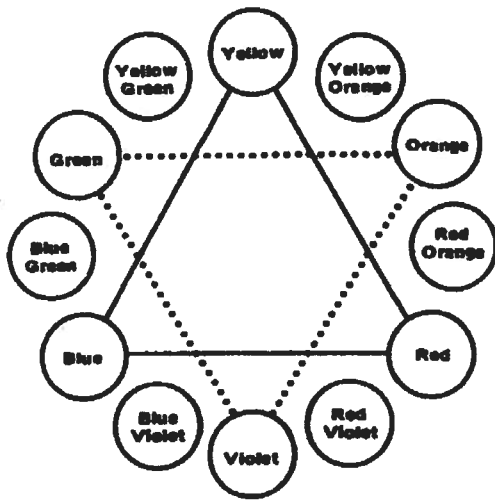
### Color Wheel Exercise:

Colors you will need:

- (a) The primary colors (Yellow, Red and Blue).
- (b) Black and White.

- (1) Draw a large circle, the size of a saucer, on the smooth side of butcher paper. Inside the large circle, draw twelve circles the size of a nickel. Number the circles as if you were making a clock dial.
- (2) Draw a solid line, making an equilateral triangle, connecting 12 (yellow) - 4 (Red) and 8 (Blue).
- (3) Draw another equilateral triangle, this time with broken lines, connecting 2 (Orange) - 6 (Violet) and 10 (Green).

Your drawing should look similar to the color wheel below.



Paint yellow in the 12 o'clock circle. Red in the 4 o'clock circle and blue in the 8 o'clock circle.

**Be sure to wash the paint knife and brush well between each color.**

**Primary Colors:**

**Yellow, Red, and Blue** (they are the strongest colors).

**Secondary Colors:**

**Orange, Violet and Green** (secondary colors are a combination of two primary colors).

### Mixing Secondary Colors:

Mix equal amount of yellow and red, with a paint knife, on a piece of foil. Did you get an orange? Great!!! Paint the orange in the 2 o'clock circle. Save the left over orange paint.

Mix equal amount of red and blue. You made a violet. Paint the violet in the 6 o'clock circle. Save the left over violet paint.

Mix equal amount of blue and yellow. Did you get a green? Fantastic!!! Paint the green in the 10 o'clock circle. Save the left over green paint.

# UNIT 4

## UNFIRED FINISHES

### Color Wheel Exercise Cont:

#### Intermediate Colors:

**Yellow-Orange, Red-Orange, Red-Violet, Blue-Violet, Blue-Green, Yellow-Green** (these are made by mixing a secondary color with an adjacent primary color). Always mix a small amount of the dark color into the light color until you achieve the desired color.

#### Mixing Intermediate Colors:

Mix orange into the yellow until you have a nice yellow-orange color. Paint this color in the 1 o'clock circle.

Mix red into the orange until you have a nice red-orange color. Paint this color in the 3 o'clock circle.

Mix red into violet until you have a nice red-violet color. Paint this color in the 5 o'clock circle.

Mix blue into the violet until you have a nice blue-violet color. Paint this color in the 7 o'clock circle.

Mix blue into the green until you have a nice blue-green color. Paint this color in the 9 o'clock circle.

Mix green into the yellow until you have a nice yellow-green color. Paint this color in the 11 o'clock circle.

**The placement of the colors should be the same as shown on the color wheel on the previous page. Save your color wheel for future reference.**

\*\*\*\*\*

#### Other colors I have mixed:

Select the correct color.

What color did you get when you mixed green and violet? \_\_\_\_\_ Citrine  
What color did you get when you mixed violet and orange? \_\_\_\_\_ Russet  
What color did you get when you mixed orange and green? \_\_\_\_\_ Olive Green

**The colors you obtained by mixing the secondary colors above are called Tertiary colors.**

Select the correct color.

What color did you get when you mixed blue and white? \_\_\_\_\_ Crisp Pink  
What color did you get when you mixed red and white? \_\_\_\_\_ Pale Green  
What color did you get when you mixed Green and white? \_\_\_\_\_ Baby Blue

**The colors you obtained by mixing white with the darker colors are called shades and tints.**

**A project that is done in several shades of one color is known as a Monochromatic color scheme (i.e. pale blue, sky blue, baby blue, etc.).**



# UNIT 4

## UNFIRED FINISHES

**Other colors I have mixed cont.:**

What color did you get when you mixed blue and black? \_\_\_\_\_

**You can obtain darker shades of colors when you mix black or brown with your colors. These are excellent colors for shadowing. The exception to the rule would be mixing black with yellow.**

What color did you get when you mixed **just a dot of black** into about one teaspoon of yellow?  
\_\_\_\_\_ **A darker shade of yellow can be obtained by using brown.**

**Select the correct color.**

What color did you get when you mixed red, orange, and green? \_\_\_\_\_ Gray  
What color did you get when you mixed yellow and violet? \_\_\_\_\_ Brown

**If you decide to mix colors, to paint your piece, be sure to mix enough of the color that you will need for that particular area. Some mixed colors may vary in color if the exact formula is not followed.**

**Remember that all colors will work well together if you watch the placement, using the five basic color schemes. Your pieces will be more interesting if the amounts of colors are unequal.**

## PROJECT 1

### Basic Information:

- (1) Project 1 is a lesson in opaque stain application. .
- (2) *Senior members must combine two techniques (i.e. antiquing over opaque stain, etc).*
- (3) *Repeating members of Unit 4 must indicate a progressive learning situation in their records.*
- (4) This piece will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (5) Brushes and supplies you may need to purchase:
  - (a) A variety of sizes of detail nylon brushes or stiff bristle brushes. Brush selection depends on the technique to be used.
  - (b) A soft to medium ox hair brush. **Keep it away from your other brushes if used with oil base antique. Mark this brush to indicate it is to be used with oil base stain only.**
  - (c) Solvent.
  - (d) Fixative (Sealer).

\*\*\*\*\*

# UNIT 4

## UNFIRED FINISHES

### Steps:

- (A) Select a small figurine or any small decorative item.
- (B) Prepare work area.
- (C) **Remember the rules.** Refer to page 3
- (D) Clean greenware using proper tools. Refer to page 4.
- (E) Initial and date the bottom of piece for identification.
- (F) Fire to cone 06. Items that require glazing inside, fire to cone 05.
- (G) Keep accurate notes as you proceed.

\*\*\*\*\*

- (H) Prepare work area. **Do not use newspaper.** Newspaper has a tendency to leave print on the piece.
- (I) Clean kiln dust from piece with a damp sponge.
- (J) Pieces requiring the inside to be glazed:
  - (1) Prepare rolling glaze mixture and roll the glaze inside of the piece. Be sure to clean any unwanted glaze from the outside with a damp sponge.
  - (2) Fire to cone 06.

\*\*\*\*\*

- (K) Clean kiln dust from piece with a damp sponge.
- (L) Start with flesh color for the human figurines. Always start with the “inside” colors and graduate to the “outside” colors (i.e. The flesh color would be applied to the face before the hair color is applied or the inside garment before the outside garment). The eyes and other small features should be painted last.

\*\*\*\*\*

### Brushing Technique:

- (1) Pour a small amount of color onto your (clean) work tile.
- (2) Thin the color, with water, to canned cream consistently.
- (3) Load a nylon brush tip with a small amount of color. Never load your brush with any more color than you can apply in a few seconds. Stains dry very quickly. If too much color is in your brush, and it dries, it will leave ripples.
- (4) The stain must be brushed out to create a smooth finish.
- (5) Overlap each time you reload your brush with the same color. Some colors may require two coats when using this form of application.
- (6) Seal the stain by polishing (buffing) with a soft cloth or by using a (gloss or matte) fixative.  
**Read manufacture’s suggestions.**
- (7) Clean your work tile well each time you change colors.
- (8) Wash the brushes with soap and water. **Never let the stain dry in the brushes.**

\*\*\*\*\*

# UNIT 4

## UNFIRED FINISHES

### Scrub Technique:

- (1) Load your stiff bristle brush tip with a small amount of color and scrub the color into the piece until smooth. Overlap each time you refill your brush with the same color.
- (2) Before changing color on your work tile, be sure bare bisque is not showing in the area in which you are working. Re-apply color if it is needed.
- (3) When the figurine piece is finished and you are satisfied with the application, paint the eyes (referring to Unit 2 "Eyes For You"). Paint tiny dots of light pink inside the nostrils. The lips may also be pink or another color of your choice.
- (4) Seal the stain by polishing (buffing) with a soft cloth or by using a (gloss or matte) fixative.  
**Read manufacture's suggestions.**
- (5) Clean brushes with soap and water. **Never let the stain dry in the brushes.**
- (6) First year members may stop here or continue if they prefer.

\*\*\*\*\*

### Oil Base Antiquing Technique:

- (1) Apply a thin coat of dark brown antiquing over entire stained piece using a soft to medium ox hair brush. The antiquing should be applied evenly. Let dry for a few minutes.  
**Do not let it dry over night.**
- (2) You will need two or three pieces of tee shirt material. One for holding the piece and one piece for antiquing. Third piece may be needed for final "clean up".
- (3) Wrap one piece of tee shirt material around your index finger and moisten the cloth with the antiquing solvent. Hold your piece with the dry cloth.  
Using the side part of your covered finger, wipe away the antiquing. Start from the top of the piece, and with one swipe, work your way to the bottom. Do not go deep inside detail areas that your cloth did not reach. This will give a natural shadowing effect. Change the moist antiquing cloth to a clean area often.
- (4) Once you have antiqued the piece, go over the piece once again with a clean moist antiquing cloth for the final cleaning. The colors under the antiquing should be bright and not muddy.
- (5) Seal the piece with a spray on fixative (gloss, matte or porcelain). Apply fixative lightly two or three times. Over (heavy) application will make your piece cloudy.
- (6) Clean brush in mineral spirits, or petroleum base solvent, and then with soap and water.

\*\*\*\*\*

### Water Base Antiquing Technique:

- (1) Using an ox hair brush apply a thin coat of dark brown antiquing over the entire piece. Let dry for a few minutes. **Do not let it dry over night.**
- (2) Wipe away antiquing with a damp sponge, from top to bottom in one swipe. Rinse sponge with each swipe. Change the water often.
- (3) Colors under the antiquing should be bright and not muddy.
- (4) Seal the piece with a fixative.
- (5) Clean brush with soap and water.

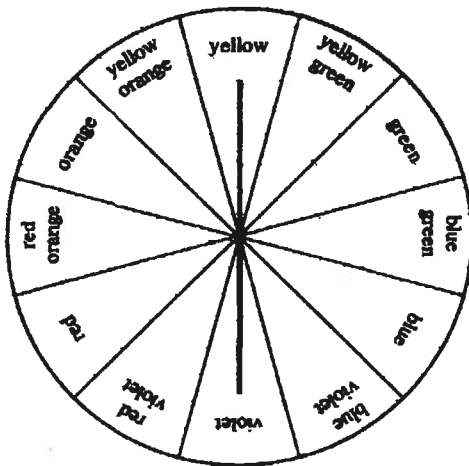
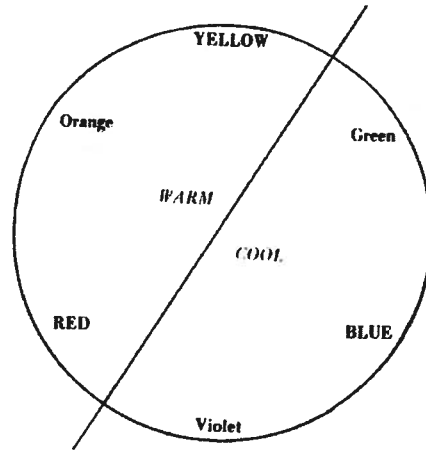
\*\*\*\*\*

# UNIT 4

## UNFIRED FINISHES

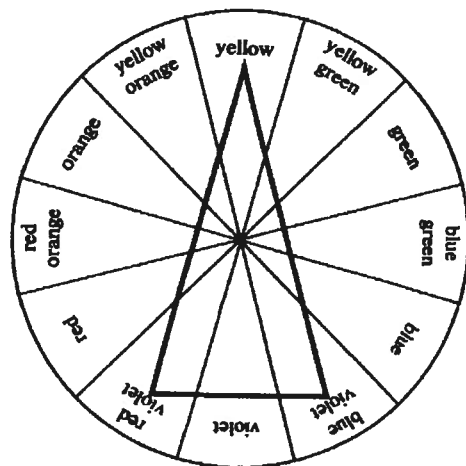
Hint:

You can always make your warm colors look brighter by using a cool complementary color with it.



### Complementary Colors:

Are colors directly across from each other on the color wheel.



### Split Complementary Colors:

Using the colors immediately to the right and left of it's complement.

\*\*\*\*\*

## PROJECT 2

### Basic Information:

- (1) You may choose to learn advanced eye making or advanced brush strokes.
- (2) Advanced eye making may include:
  - (a) Human.
  - (b) Animal.
  - (c) Fowl.
  - (d) Reptile.
- (3) Advanced brush strokes may include:
  - (a) Teardrop.
  - (b) Curved teardrop.

# UNIT 4

## UNFIRED FINISHES

### Basic Information cont:

- (c) Eyebrow.
  - (d) "C" (forward and backward).
  - (e) "S" (forward and backward).
  - (f) Leaf stroke (basic).
  - (g) Thick and thin strokes.
  - (h) Long and short strokes.
  - (i) Design work combining different strokes.
- (4) This project will be considered as one of your required pieces. **Learning projects are usually not entered in competition.**
- (5) You may complete the skill of your choice on a plain piece or figurine.
- (6) Brushes you may use:
- (a) Sable or Nylon Round brush (size/s to fit brush strokes).
  - (b) Sable or Nylon Square Shader brush (size/s to fit brush strokes).
  - (c) Sable or Nylon Liner brush (size/s to fit brush strokes).
  - (d) Sable or Nylon Detail brush (size/s to fit brush strokes).

\*\*\*\*\*

### Steps:

- (A) Select suitable greenware.
- (B) Prepare work area with suitable covering.
- (C) **Follow the safety rules.** Refer to page 3
- (D) Clean greenware as outlined on page 4. Initial and date the bottom of your piece.
- (E) Have the piece fired to the proper cone size.
- (F) Keep accurate notes as you proceed.

\*\*\*\*\*

**Your leader or ceramic instructor will give you the instructions for your project.  
Remember to enter your information on the technique sheet as you process.**

\*\*\*\*\*

## PROJECT 3

### Basic Information:

- (1) **Fantastic!!!** You have completed projects 1 and 2.
- (2) You are ready to create your project 3 which may be your exhibit piece.
- (3) The skills learned in this unit:
  - (a) Opaque stain application.
  - (b) Making advanced eyes or brush strokes.
  - (c) How to create a color wheel from the primary colors.

\*\*\*\*\*

# UNIT 4

## UNFIRED FINISHES

### Suggestions:

- (1) Before choosing your piece, and if you have the opportunity, go to several ceramic studios to see what is available.
- (2) Refer to web sites and ceramic publications for technique ideas. Check references on page 70.
- (3) You may want to change your piece by alternating the design of the greenware (Greenware adaptation).
- (4) Be sure to stay within your unit medium (unfired finishes).
- (5) Keep accurate notes as you proceed.

### Steps:

- (A) Follow the cleaning steps as outlined on page 4.
- (B) Decide on the technique you wish to achieve.
- (C) Complete your Ceramics e-Record.
- (D) Evaluate your piece, using the guide line on page 8.

### Ceramic Check List:

New brushes and tools I learned about in this unit.

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

What I learned about the care of brushes and tools in this unit.

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**Congratulations!!** By completing 3 or more projects, exhibiting Ceramics e-Records and one project, you have completed this year's Unit.

# UNIT 4

## UNFIRED FINISHES

CERAMIC KNOWLEDGE AND GOALS CHECKLIST:	New skills I have Learned.	Skills I want to learn or improve.
Altering the greenware pattern for a special effect.		
Application of water-base opaque stain.		
Application of water-base translucent (antiquing) stain.		
Application of oil-base translucent (antiquing) stain.		
Application of pearl stain.		
Application of metallic stain.		
Application of lustres stain.		
Chalk technique.		
Gold leafing technique.		
Dry brush technique.		
Wet brush (side brush) technique.		
Simulated China paint technique.		
Rouging technique.		
Veiling technique.		
Stencil technique		
Advanced human eye technique.		
Advanced animal, fowl and reptile eye technique.		
Advanced Brush stroke technique.		
Norwegian Rosemaling technique.		
Design work		

**Put the date when you learned the skills. Place a check mark in the column of skills you would like to learn. Discuss skills you would like to learn with your leader. She/he will be able to give you hints as how to achieve your goal.**

\*\*\*\*\*

# UNIT 5

## PORCELAIN DOLLS

### Requirements:

(Refer to Unit 5 requirements on page 2)

### Basic Information:

Choosing the doll you will make:

You will learn more skills with each doll you make. The simplest doll to make is the cloth bodied baby doll. That should be the first doll made by a Junior or Intermediate member. Although seniors may choose to make this doll, a better choice for them to begin with would be one of the more advanced dolls. As the member progresses through the series of dolls more skills will be gained. The most complex doll is the Antique Reproduction Doll. It requires greater project skills, at least three years of experience, as well as research to determine its authenticity. The age of the member, as well as experience within the project will be considered as the dolls are judged. Your leader or instructor can help you choose which doll is appropriate for your project.

### Porcelain Dolls:

- (1) Are finished, using china paint, on polished bisque or glazed porcelain (china).
- (2) Must be fired to the proper maturing bisque cone size to make it chip resistant.
- (3) Are more durable than earthenware dolls.

\*\*\*\*\*

**Soft-fired greenware is highly recommended for all doll projects.**

\*\*\*\*\*

### Supplies most commonly used for doll projects:

<i>A water container large enough to submerge the doll head</i>	
<i>Bridal net</i>	<i>Ball Stylus</i>
<i>Nylon stocking</i>	<i>Comfy scrub</i>
<i>Lint free towel</i>	<i>Small Detail carving tool</i>
<i>Vinyl glove</i>	<i>Feather knife</i>
<i>Glazed tile</i>	<i>Wet scrubber</i>
<i>Mini Green Clean</i>	<i>Doll sponge</i>
<i>Pallet knife</i>	<i>Grit scrubber</i>
<i>Angular Shader brush</i>	<i>Pro Mop brush</i>
<i>Lip brush</i>	<i>Liner brush</i>
<i>Small Square Shader brush</i>	<i>Mini Green Clean brush</i>
<i>Body</i>	<i>Assortment of colors</i>



# UNIT 5

## PORCELAIN DOLLS

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### \*Helpful hints working with soft-fired greenware:

- (1) Use lukewarm water (extreme temperatures can cause thermal shock, and may crack your piece).
- (2) When placing your, soft-fired greenware, piece into lukewarm water, allow the water to flow into the piece slowly. You should **not** get a gurgling sound. The sudden force of air/water pressure may crack your piece.
- (3) **Do not** hold your greenware piece by an edge (i.e. neck and/or shoulder plate edge). Hold pieces in the palm of your hand (cradle support).
- (4) Be aware of the construction of the finished doll as you are cleaning. Be sure arms and legs fit into sockets, if that is appropriate to your doll. Check sizes of earring holes (clean and enlarge). Enlarge and clean holes in shoulder plates (inside and outside).
- (5) Check and smooth rough edges. Porcelain, when high fired, is glass like. Rough edges can cut elastic and/or fingers.
- (6) Measure and compare eye-cuts. Eyes are to be as near to exact in width and length as possible. Use an eye-scale to do this before you bevel behind the eye cut.
- (7) Beveller size: This is not determined by the size eyes you are going to insert. The size beveller you will use will touch both sides of the eye cut, and after a few gentle turns, will touch on all edges of the eye cut.
- (8) Rinse your piece in lukewarm water, using a sponge to remove all residues. Let the piece dry thoroughly. Check the piece again under good lighting for any scratches, pits, or flaws. If you have any white residue, rinse once more before high firing.
- (9) You need to clean ALL surfaces of the porcelain, even if it doesn't seem to need it. If you don't the "dolly police" will get you!! Actually, you may have white spots on the ends of fingers, toes, and nose, which will appear when it is fired to bisque.
- (10) Cleaning is the most important part of doll making. Not the most fun, necessarily, but the most important part to achieving the glass-smooth finish of china. This glassy finish is essential for good China paint application.

Studio Lesson outline by Jean Edsall



# UNIT 5

## PORCELAIN DOLLS

**S**leeping baby doll with cloth body and porcelain hands.  
Recommended for first year Junior and Intermediate members.

### Basic Information:

- (1) Your leader/doll instructor will guide you in selecting the Porcelain slip color in which your doll should be cast. Have your leader/doll instructor give you a list of supplies you will need for this project.
- (2) Incise initials and date on the back of the doll's neck. Initial hands (wrist area).
- (3) **Safety rules must be followed.** Refer to page 3.
- (4) Keep accurate notes as you proceed.
- (5) Evaluate your doll with your leader or instructor. Use the judging sheet on Page 53 as a guide line.
- (6) Complete your Ceramics e-Record sheets.

\*\*\*\*\*

### Required skills to be learned:

- (1) Cleaning soft-fired Porcelain (greenware).
- (2) Mixing China Paint.
- (3) Eyebrow brush strokes.
- (4) Applying blushing to cheeks.
- (5) Applying lip and finger nail color.
- (6) Assembling doll parts to a cloth body.



Picture by Karin Goulian  
Seeley's Ceramic Service, Inc.

# UNIT 5

## PORCELAIN DOLLS

# Doll with porcelain arms and legs.

### Basic Information:

- (1) Your leader/doll instructor will guide you in selecting the Porcelain slip color in which your doll should be cast. Have your leader/instructor give you a list of supplies you will need for this project.
- (3) Incise initials and date on the back of the doll's neck. Place initial inside other parts.
- (4) **Safety rules must be followed.** Refer to page 3.
- (5) Keep accurate notes as you proceed.
- (6) Evaluate your doll with your leader or instructor. Use the judging sheet on page 53 as a guide line.
- (7) Complete your Ceramics e-Record sheets.

\*\*\*\*\*



Picture by Karin Goulian  
Seeley's Ceramic Service, Inc.

### Required skills to be learned:

- (1) Define finger separation using finger tool.
- (2) Define the fingernails and toenails.
- (3) Application of a wash and shadowing.
- (4) Painting of the hair (option).
- (5) Paint basic eyelashes.
- (6) Making eye cuts and sizing the openings for glass eyes.
- (7) Set eyes.
- (8) Assemble doll parts using wire armature and a cloth body.

\*\*\*\*\*

# UNIT 5

## PORCELAIN DOLLS

**A**ll porcelain doll.



Picture by Karin Goulian  
Seeley's Ceramic Service, Inc.

### Basic Information:

- (1) You will learn how to “string” a doll.
- (2) Senior members may have the option of learning how to paint “life like” eyes.
- (3) Your leader/doll instructor will guide you in selecting the porcelain slip color in which your doll should be cast. Have your leader/doll instructor give you a list of supplies you will need for this project.
- (4) Incise initials and date on the back of the doll’s neck. Place initials inside other doll parts.
- (5) **Safety rules must be followed.** Refer to page 3.
- (6) Keep accurate notes as you proceed.
- (7) Evaluate your doll with your leader or instructor. Use the Judging sheet on page 53 as a guide line.
- (8) Complete your Ceramics e-Record.

\*\*\*\*\*

### Required skills to be learned:

- (1) Paint advanced eyelashes.
- (2) Layer eyebrow strokes with multiple firings.
- (3) Create dimension with shading.
- (4) “String” the body assembly.

\*\*\*\*\*

# UNIT 5

## PORCELAIN DOLLS

**S**houlder plate doll for a cloth body with porcelain arms and legs.

### Basic Information:

- (1) You will learn to assemble a Shoulder plate doll.
- (2) False eye lashes may be used (optional).
- (3) Your leader/doll instructor will guide you in selecting the porcelain slip color in which your doll should be cast. Have your leader/doll instructor give you a list of supplies you will need for this project.
- (4) Incise initials and date on the back of shoulder plate. Place initials inside other doll parts.
- (5) **Safety Rules must be followed.** Refer to page 3.
- (6) Keep accurate notes as you proceed.
- (7) Evaluate your doll with your leader or instructor. Use the judging sheet on page 53 as a guide line.
- (8) Complete your Ceramics e-Record sheets.



Modern doll - by Linda Mueller

### Required skills to be learned:

- (1) Use overall washes/tints to enhance the complexion.
- (2) Paint finger and toenails to look "life like".
- (3) Learn how to put a skeleton armature in a cloth body.
- (4) Ears may be pierced for earrings.

\*\*\*\*\*

# UNIT 5

## PORCELAIN DOLLS

### Ethnic Doll.

#### Basic Information:

- (1) You may use any style doll.
- (2) Your leader/doll instructor will guide you in selecting the Porcelain slip color in which your doll should be cast. Have your leader/doll instructor give you a list of supplies you will need for this project.
- (3) Initial and date must be visible.
- (4) **Safety rules must be followed.** Refer to page 3.
- (5) Keep accurate notes as you proceed.
- (6) Evaluate your doll with your leader or instructor. Use the judging sheet on page 53 as a guide line.
- (7) Complete your Ceramics e-Record sheets.

\*\*\*\*\*

#### Required skills to be learned:

- (1) Overall wash.
- (2) Eyebrow feathers.
- (3) Shading.
- (4) Blush.
- (5) Contour shading.
- (6) Lower lashes pulled from the outer edge of the lower lid.
- (7) Two toned brow hairs.
- (8) Inner lip shading.
- (9) Outer lip shading.
- (10) Ears may be pierced for earrings.

\*\*\*\*\*



Picture by Karin Goulian  
Seeley's Ceramic Service, Inc.

# UNIT 5

## PORCELAIN DOLLS

### C hina doll.

#### Basic Information:

- (1) You will need to use a Parian doll.
- (2) The legs may have flat or high-heel boots.
- (3) Use a cloth body with corset.
- (4) Incise initials and date on back of neck.
- (5) **Safety rules must be followed.** Refer to page 3
- (6) Keep accurate notes as you proceed.
- (7) Evaluate your doll with your leader or instructor. Use the judging sheet on page 53 as a guide line.
- (8) Complete your Ceramics e-Record sheets.

\*\*\*\*\*

#### Required skills to be learned:

- (1) Learn to paint on a “glazed” (china) doll.
- (2) Decorate the molded jewelry with glass jewel magnifiers and/or gold and silver.
- (3) Assemble a Parian doll.

\*\*\*\*\*



Marie Louise - Parian lady -mold by Seeley

# UNIT 5

## PORCELAIN DOLLS

# A

ntique Reproduction doll (German or French).

*Recommended for members with at least 3 years of experience.*

### Basic Information:

- (1) Research must be done on the selected reproduction doll. Information learned must be included in your story.
- (2) The coloring, accent lines and type of eyes must be an exact copy of the original doll. A picture of the original antique doll must be included in the records.
- (3) The body must be made of the same type of material as the original doll.
- (4) The wig, if applicable, must be made of either mohair or human hair.
- (5) The doll must be styled and groomed, from the undergarment to the outer garments as the original doll.
- (6) The costume may be made or purchased. The costume itself will not be judged, but will count on the overall appearance.
- (7) Keep accurate notes as you proceed.
- (8) Evaluate your doll with your leader or instructor. Use the judging sheet on page 53 as a guide line.
- (9) Complete your Ceramics e-Record sheets.

\*\*\*\*\*

### Required skills to be learned:

To produce a doll that looks like a doll that was made about a hundred years ago.



**Bru Shandele**  
**Made by Jean Edsall**



# UNIT 5

## PORCELAIN DOLLS

### Porcelain Doll

### Judging Sheet

	E	G	F	NI	Comment
Shows Creativity (consider age, experience and technique used)					
Cleaning					__Seam Lines __Smoothness __Finger separation
Eyes Eye sizing Painted eyes					__Corners __Size __Smoothness __Evenness
Eyebrows					__Shape __Placement __Application of Color
Eyelashes					__Shape __Placement __Application of color
Details & Accents Lips Finger & Toe nails Teeth and/or tongue					<i>Lips</i> __Application of color __Evenness <i>Teeth/Tongue</i> __Placement <i>Fingernails</i> __Application of color __Evenness <i>Toe nails</i> __Application of color __Evenness
Blushing and over all wash					<i>Face</i> __Shading __Evenness <i>Body</i> __Shading __Evenness
Body Assembly					<i>If applicable.</i>
Over all appearance					<i>The total evaluation of greenware cleaning should be taken under consideration.</i>

**Note:** Judge only areas that are applicable to the doll. Dolls are to be evaluated only by the workmanship on the doll not the attire selected. The attire of the Reproduction dolls will be judged in the over all appearance.

**E = Excellent**

**G = Good**

**F = Fair**

**NI = Needs Improvement**

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Requirements:

Refer to requirements Unit 6 on page 2

### Basic Information:

#### Hand Construction with Stoneware:

- (1) Stoneware is more or less vitreous depending on the temperature to which it is fired.
- (2) Hobbyist can rarely fire stoneware to a point where it is completely vitreous; as a result food and drink containers must be glazed inside.
- (3) Most stoneware clays are buff or gray in color when fired. These colors lend well to bold designs and intense colors rather than pastel tones.
- (4) Stoneware is more chip resistant than earthenware when fired to proper maturing cone.

#### Preparing Clay for work:

Most clay is packaged in 25# moist blocks. Before hand building or throwing on the wheel the clay must be wedged (kneaded) to condition and to drive out the trapped air bubbles. To knead (wedge) the clay, take the amount of clay you feel comfortable with and form a ball. Flatten the ball of clay to a degree. Grasp the edge with both hands and fold it into the center of the ball with a downward push. Give the ball a quarter turn and repeat. Repeat the grasp, fold, push and quarter turn routine until the clay is smooth, plastic like and free of air bubbles. Check at intervals by cutting the ball in half with a cutting wire. If there are no air bubbles visible on the cutting surface, the clay is ready to use. Do not be surprised if you must spend 15 minutes or longer, on this process. You can never over knead the clay. Air bubbles can create problems, causing the piece to explode in the firing.

Some potters will season the clay after the initial preparation. In the seasoning process, you will want to store workable sizes of clay inside an airtight container for a day or two. The result is a clay body that is highly workable.

\*\*\*\*\*

Keep accurate notes as you proceed.

Evaluate your project using the judging sheet on page 63 as a guideline.

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### **Skill Options:**

#### **Pinch Pot:**

A simple pinch pot is recommended for beginning Juniors.

Tools and materials needed:

Clay.

Cloth.

A small container of water.

Modeling tool.

A small Sponge.

Procedure:

You should have a piece of prepared clay that will fit easily into the palm of your hand (about the size of a tennis ball). Shape the clay into a round ball. Hold the ball of clay in the palm of one hand and push the thumb of the other hand into the center of the ball. Rotate the ball as the thumb and fingers form the pot with a gentle squeezing method. Let the first two fingers press from the inside and your thumb press against the outside. Always support the clay in one hand while working with the other hand. If the wall starts to crack as you work on it, moisten and mend the crack. Be careful not to let your piece get to wet. When your pot is about ¼ inch thick (bottom and sides), press the bottom of the piece gently against a level surface (i.e. a table top). This will create a flat bottom and prevent the piece from “rocking” when upright. The rim may be leveled by using a knife or nail scissors. A damp sponge can be used to smooth sides and rim. Carefully carve a design and/or apply texture to the sides of the piece. Scratch your initials and date on the bottom. Let your piece dry thoroughly and fire the piece to the correct cone size. The piece may be glazed and fired again to the proper cone size.

**Sculpture with pinch pots is recommended for seniors and/or repeating members.**

Animals are great fun. Dinosaurs, pigs, elephants, mice, rabbits, owls, turtles, to mention a few, can easily be shaped by joining two or more pieces, using the pinch pot method. Use a crosshatch score on areas that will be joined. Make a slurry (slip) with a small amount of clay and water. Dampen both sides that will be joined with the slip and attach the pieces. Be sure to put an air hole, using a pin or needle tool, in pieces that may have air trapped inside. Small pieces such as legs, tails and heads can be solid. Be creative!! Evaluate your piece using the judging sheet (page 63) as a guideline.

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# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Skill Options Continued

#### **Draped Shape:**

Recommended for beginning Juniors.

#### Tools and materials needed:

Two strips of wood approximately 3/8" thick and 12" long.

A wooden rolling pin.

An 18" piece of canvas or burlap material.

An object which to drape the clay (slab) over (i.e. bowl, pan, rock, etc.).

One ball of, properly prepared, clay to accommodate the size of your project.

Small brush.

Small sponge.

Medium size piece of plastic.

Small container of water.

Small container for slurry.

#### Procedure:

Place the ball of clay in the center of the material. Place the strips of wood on each side of the ball of clay. Press the ball down and proceed rolling the clay with the rolling pin until you make a slab approximately 3/8" thick (figure.1). Trim your slab to a pleasing shape and smooth the edges. Carefully transfer your clay covered canvas, placing it over your convex shape (figure 2). You may continue to shape until you create the desired effect.

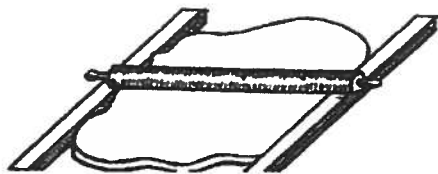


Fig. 1

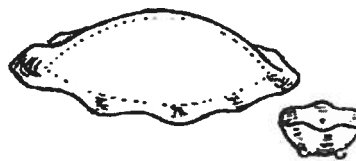


Fig. 2

To make feet for your project, roll 3 or 4 balls of clay (depending on size of project) of equal size and shape. With a small piece of clay, add water to make slurry (slip). Flatten one side of each ball. With a cleaning tool or sharp object, score the flat side of the ball and the bottom of your piece where the feet will be attached, making an x. Be sure the placement of the feet will be balanced on your project. With a small brush, paint a bit of slurry on the flattened end of the foot surface and onto the area of attachment. Press the foot firmly onto the primary object. Each foot (ball) should be equally spaced to ensure the piece will sit evenly on a flat surface. Take a damp brush or sponge and smooth the attachment site. Cover lightly with a piece of plastic to dry to a leather hard state. If the project is left too long, over the draped object, it will crack. The cracking is due to

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Skill Options Continued

#### **Draped Shape Continued:**

shrinkage of the clay. After drying for a while, carefully remove from the convex shape. When completely dry, clean rough edges and fire to proper cone size. Decorate as you like and fire again to the proper cone size. Evaluate your piece using the judging sheet (page 63) as a guideline.

**Seniors and repeating members must show an extra degree of difficulty.**

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#### **Sagged Shape:**

Recommended for beginning Juniors.

Tool and materials needed (same as draped shaped).

Procedure:

This project is very similar to the draped shape project, except you are going to sag the clay covered canvas into your concaved article (i.e. bowl, free hanging sling, etc.). After preparing the slab to the size you wish, sag it into the article you have chosen for this project. If feet are desired, follow the directions in the draped shaped skill. **Do not attach at this point.** Wrap feet in plastic to keep wet until clay bodies are ready to attachment (Leather hard state). Cover project with plastic to dry slowly. After the piece is leather hard and will support itself, carefully turn it over and place the feet where desired. When the piece is dry, clean, fire and decorate as you wish. Fire your piece for the second time. Evaluate your piece using the judging sheet (page 63) as a guideline.

**Seniors and repeating members must show an extra degree of difficulty.**

\*\*\*\*\*

#### **Slab:**

Tools and Materials needed:

Prepared clay (enough for the size of box you are making).

Paper, pencil and scissors to make your pattern.

Slurry.

Cleaning tool or needle tool for scoring.

Sharp, thin blade knife.

You can make many unique pieces with this technique. A simple box is recommended for beginning Juniors. **Seniors and repeating members must show an extra degree of difficulty.**

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Slab Continued

#### Procedure for a box:

Make a pattern for the top, bottom and walls of the box out of paper. Roll out your clay as directed in the drape shape section. Cut pieces from your pattern and lay aside. Let the clay pieces dry to leather hard state so they will support themselves. Beginning with the base, score the edges, add slurry and lightly press together until you have made the box. Roll out 1/8" coils. Add the slurry to the corners of the box and place the 1/8" rolls in the corners using your finger or a small round tool. Press and smooth coils into the corners while supporting your outside wall. By adding these coils, it will strengthen the construction of the box and keep it from falling apart or opening up in the bisque firing. If you wish a lid, score the top piece, add slurry and place the lid on top. Smooth the edges and the outside of the box. With a thin-blade sharp knife, approximately 1" (from the top) cut a wavy line all around the box forming the lid. (figure 1)

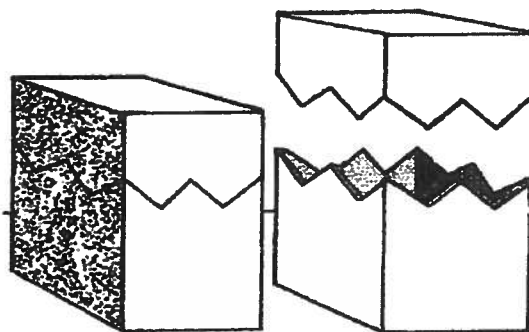


Fig. 1

Remove lid, turn upside down and re-enforce the corners. Place the lid back on the box to dry. If you want to add knobs or handles to your box, add them with the slurry at this time. (figure 2) Evaluate your piece using the judging sheet (page 63) as a guideline.

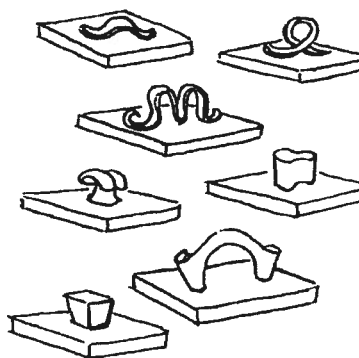


Fig 2

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Skill Options Continued

#### Slab box continued:

Cover with plastic, dry slowly so it does not crack. Fire your project to the proper cone size. Decorate as you like and fire again. Evaluate your piece using the judging sheet (page 63) as a guideline.

\*\*\*\*\*

#### Coil:

#### Tools and materials needed:

- Prepared clay.
- Canvas, a plaster bat or a piece of plaster board.
- Slurry.
- Cleaning tool or needle tool for scoring.
- Knife or Fettling knife.

#### Vase or cylinder procedure:

Determine the shape and size of the pot and cut a base, following the slab technique. The base may also be formed by tightly formed coils, but the "coil type" base is more likely to open during the first firing.

Place the base on a piece of canvas, a plaster bat, or a piece of plaster board. You will now need a needle tool, small brush, slurry and a small container of water. Begin by rolling several lengths of clay rope pieces. They may be between  $\frac{1}{4}$ " to  $\frac{1}{2}$ " in diameter and consistent in size. Score the top edge of the base and one side of the clay rope with a needle tool. Apply the slurry to the scored edge of the base and place a coil on top. Press firmly and smooth with damp fingers (Figure 1). The two rope ends that butt together should be cut on an angle, scored, and attached with the slurry.

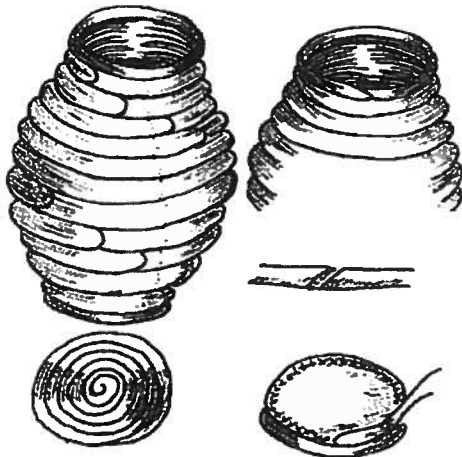


Fig. 1

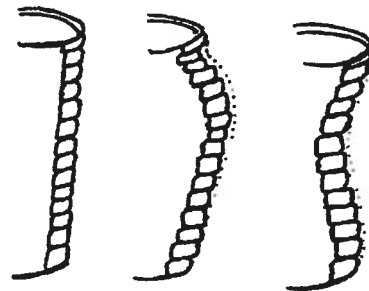


Fig.2

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Skill Options Continued

#### Slab Vase or cylinder continued:

The shape the piece may be changed (i.e. convex or concave) by simply making the clay rope longer or shorter. As you add the longer clay rope the pot will expand outward. Shorter clay ropes will create the opposite as they are added (figure 2). As you work the piece upward, after adding a few clay coil, smooth the inside coils with slightly dampened fingers. The outside may be also smoothed (optional). Smooth the edges. Let the piece dry slowly (by placing a piece of plastic over the piece) and bisque fire when completely dry. Glaze the bisque piece and fire to the proper cone size. Evaluate your piece using the judging sheet (page 63) as a guideline.

\*\*\*\*\*

#### Sculpture:

Tools and materials needed:

- Prepared clay (the amount that your sculpture will need).
- Loop tools.
- Modeling tool.
- Cleaning tool or needle tool for scoring.

As your skills improved, you may try your hand at sculpturing. Let your imagination go wild.

Dinosaur procedure:

A dinosaur (or any animal) is a good subject for this technique. With a well-prepared (wedged and seasoned) ball of clay, shape it to resemble the body. Turn it upside down and remove the clay from the center with your loop tools. Keep the wall thickness under ½" thick. If you have air bubbles in your clay or have the wall too thick, it is likely to explode in the firing process. After body preparation, you can make coils and shape them into tail, neck, head, and feet. Attach them to the body, using the scoring and slurry method. Be sure to press the "add-ons" securely to remove air pockets. The scales can be made by pinching and shaping small balls of clay and attaching them to the dinosaurs back. Remember when attaching any "add-ons", make sure you do not trap air bubbles or you might have a dinosaur without some of its body parts. Be creative and have fun!! Evaluate your piece using the judging sheet (page 63) as a guideline.

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# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Skill Options Continue

#### Throwing on the potter's wheel:

You may have the potter's wheel available to you in school, but if not, you will have to find a potter who has access to a wheel to help you with this project. This is the most challenging technique to master. It takes practice, time and patience to make a piece in which you can be proud. Evaluate your piece using the judging sheet (page 63) as a guideline.

#### Decorative:

With this skill you can get very creative and original. Beginning with one of the skills, you can add combinations of carving, cut-outs, texturing, add-ons and unusual glazing and glaze combinations. You can indeed create some unique, one-of-a-kind pieces of art.

**A technique for Seniors only.** If you formulated your own glaze, be sure you include this in your story. Evaluate your piece using the judging sheet (page 63) as a guideline.

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### Basis tools for your pottery kit:

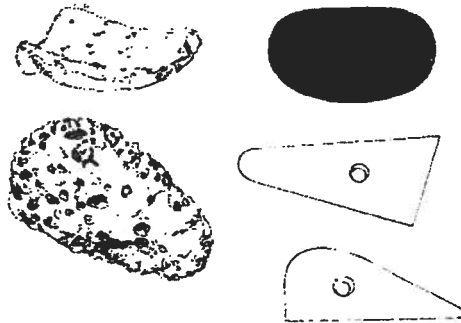


Fig.1

Fig2

**Sponges:** (Figure 1) Usually of natural origin in many shapes and sizes. Used for moistening clay for throwing, cleaning, and smoothing pieces. An Elephant Ear is a special fine grained sponge ideal for pottery.

**Ribs:** (Figure 2) Also called kidneys, are made of carved hardwood, rubber and metal. They are used for shaping and refining pieces.

# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Basic Pottery Tools Continued

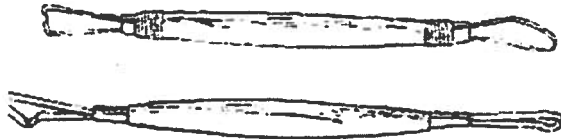


Fig. 3

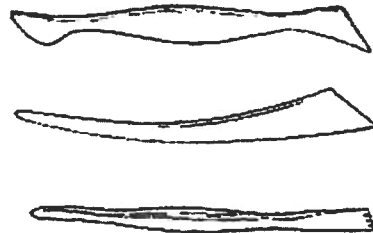


Fig. 4

**Loop Tools:** (Figure 3) Made of hardwood with a loop of thin wire or flat metal at either end. They are used trimming, carving, decorating and many other uses.

**Modeling Tools:** (Figure 4) Hardware tool of many different sizes and shapes used to smooth joints and seams, also used for joining and to texture.



Fig. 5

**Needle Tool:** This tool has a thin needle projecting from one end of a wooden handle (Figure 5), is used for trimming, decorating and scoring.



Fig. 6

**Fettling Knife:** (Figure 6) A special knife with a long, narrow blade used for trimming, carving and slicing clay.



Fig. 7

**Cutting Wire:** (Figure 7) Thin wire with wooden handles at each end used to cut clay.

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# UNIT 6

## HAND CONSTRUCTION WITH STONEWARE

### Hand Construction Judging sheet

	E	G	F	NI	Comment:
Creativity					
Cleaning					
Construction					
Attachments					
Uniform Thickness					
Texture and Design					
Bottom sits well on table					
Glaze Application					
Centered well (wheel thrown)					
Evident Cracks					
Over all appearance					

E = Excellent

G = Good

F = Fair

NI = Needs Improvement

# Glossary of Ceramic Terms

**Adaptation:**

The process of changing the original design of the greenware.

**Airbrush:**

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

**Antiquing:**

Removing applied color to accent detail.

**Ball-Jointed:**

A doll body with separate balls in the joints.

**Banding Wheel:**

A hand-operated turntable used to apply or blend bands of color and to accomplish other types of decorating.

**Beveling:**

The act of rounding out the eye sockets inside the head.

**Bisque:**

Clay that has been fired to maturity but not glazed.

**Bisque Doll:**

Doll with head of bisque. Material in body varies.

**Blistering:**

Broken bubbles on fired glaze surface.

**Bone-dry:**

Term used to describe greenware that is completely dry, containing no moisture.

**Bonnet Doll:**

Doll with molded bonnet or hat.

**Breather:**

Doll with nostrils pierced through porcelain.

**Brocade Glaze:**

A non-flowing glaze that is applied with a tool or brush for raised design.

**Butting:**

Term used to describe placement of two or more glazes in close proximity on the same piece. The glaze is applied so that it comes within the width of a pencil-point line of the first glaze but does not touch. The butting technique prevents glazes from flowing together.

**Cat's Tongue:**

Flat brush with pointed tip.

**Casting:**

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

**Casting Slip:**

A liquid clay for mold casting.

**Ceramics:**

Any type of clay objects given permanent shape by firing in a kiln.

**China:**

Glazed porcelain with shiny surface.

**China Doll:**

Doll with shoulder head (and limbs) of china.

**China Paint:**

Paint fired onto glaze and bisque.

**Clay Body:**

Earthenware, Stoneware and Porcelain are the three most popular. Available in both slip and modeling clay.

**Cleaning Greenware:**

Removal of mold seams lines and imperfections from unfired clay objects.

**Cleanup tool:**

The tool used to clean greenware.

**Clear Glaze:**

A transparent glaze (void of color when fired).

**Cloudy Glaze:**

Glazing problem caused by glaze being applied too thickly.

**Coil Technique:**

A rope of clay used for hand-building clay pots.

**Concave:**

Hollow (i.e. a bowl is concave).

**Cone:**

Heat-measuring device used when firing a kiln. Usually a three-sided pyramidal form of clay and chemicals made to bend when a specific temperature is reached inside a kiln.

# Glossary of Ceramic Terms

**Convex:**

Dome shape, as a bubble.

**Crackle Glaze:**

Glazes which have been especially formulated to produce a delicate "crazed" surface pattern.

**Craters:**

Bubbles that forms, break and then set as the kiln cools.

**Crawling:**

A term used to identify a glaze defect in which the glaze pulls away or crawls from the bisque. Caused by glazes applied over a hard spot (chemical build-up on mold used), dusty or soiled bisque.

**Crazing:**

Hair-like cracks which appear on a fired glaze surface. Often referred to as either immediate or delayed crazing.

**Cross-Hatch:**

Crisscross scratches made where two pieces of clay are to be joined.

**Crystals:**

A specially formulated colored glaze that have been fired and then ground to various sizes.

**Crystal Glaze:**

Glazes combined with crystals which melt in the firing to form interesting patterns.

**Decal:**

A design, on special paper, transferred to a glazed surface and fired for permanency.

**Dome Head:**

Doll head is round, usually with molded or painted hair. Crown is not cut off.

**Dry-brushing:**

Feather- effect brushstroke achieved by using a dry brush with wet color; used also for animal fur.

**Dry-footing:**

Bottom area of article left unglazed so stiling is unnecessary. A technique used with is Stoneware and Porcelain.

**Dust-free Technique:**

New method for cleaning (soft-fired dolls) without creating dust. Ware and tools are kept wet throughout cleaning.

**Earthenware:**

Non-vitreous (porous) low-fire clay body.

**Earth-tones:**

Buff, red, brown.

**Embossing:**

Is the act of forming a raised design.

**Ferrule:**

The metal band that holds the bristles of the brush and the handle together.

**Finger tool:**

Needle fine saw-tooth tool for cleaning the fingers of dolls and figurines.

**Firing:**

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

**Flange Neck:**

Doll neck with a rim at the edge for holding it to a body. Usually for baby dolls.

**Flirty Eyes:**

Doll eyes that move from side to side and also open and close.

**Flux:**

A white powder that can be added to china paint to help it bond to the porcelain or to add gloss to the paint. Also helps china paint to move more freely.

**Greenware:**

A form made of raw clay. May vary in color depending on clay body.

**Glaze:**

A raw material that must be fired to bring out the finish.

**Hard Spot:**

A spot on greenware that resists decorating material. May be caused by chemical build up on mold used or cleaning greenware with oil on the hands.

**Incise:**

The design is scratched in the greenware before color has been applied.

**Knead:**

To condition modeling clay.

# Glossary of Ceramic Terms

## **Leather-hard:**

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

## **Loading:**

A process of completely fill brush with color.

## **Luster:**

Decorating medium applied over fired glaze for iridescent (rainbow-like) effect.

## **Majolica:**

A glaze or underglaze decoration over any unfired glaze that does not move in the firing (i.e. matte glaze).

## **Matte Glaze:**

A non-moving glaze which produces a smooth, dull matte finish after firing.

## **Mending:**

Repairing broken greenware or bisque.

## **Modeling Clay:**

Clay used for hand building or throwing on a wheel.

## **Mold:**

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

## **Neck Joint:**

Where the doll's neck and shoulders separate.

## **Nodder:**

All-bisque doll with jointed neck only.

## **One-stroke:**

A highly concentrated, translucent underglaze paint used for detailed work. (i.e. making lines and brush stroke technique).

## **Opaque:**

A color you are unable to see through.

## **Overall Wash:**

Flesh-tone tinting of bisque doll surface. Usually the first china paint firing.

## **Overglaze:**

A decorative finish, fired over a glazed surface.

## **Palette Knife:**

A flexible steel-blade knife for mixing color.

## **Pinch Pots:**

Small pots made by pinching out the wall of a lump of clay.

## **Pin-holes:**

A glaze defect caused by under-fired bisque, dust left on ware or in the kiln, applying glaze to greenware and/or poor condition of greenware.

## **Plasticity:**

The characteristic of being workable into many shapes (i.e. properly prepared modeling clay).

## **Polish:**

A southeast Indian technique. They polished their pots with stones that were handed down from generation to generation. A soft cloth, tissue or a large burnishing agate may be used to polish underglaze on greenware.

## **Pooling or Puddle:**

Fired glaze which has run to the bottom, causing drips or into the detail, causing an over-glazed condition.

## **Porcelain:**

The grandest of all the clay bodies. A translucent, vitreous clay body when high fired. Very delicate in the greenware form. Available in many colors.

## **Porcelain Doll:**

Doll with at least the head made of china or bisque.

## **Pour Gate:**

That portion of the greenware that was formed when the slip was poured from the mold.

## **Potters Wheel:**

Revolving wheel driven by hand, foot or electric power, used in forming articles from modeling clay.

## **Pottery:**

Any article formed from clay.

## **Pouncing:**

Applying color to ware with quick up-and-down movements, using a brush or a sponge.

## **Quill:**

A type of brush used for china painting.

## **Reproduction Doll:**

A contemporary recreation of an antique or old doll.

# Glossary of Ceramic Terms

**Rolling Glaze:**

A method of covering inside area of ware, by rolling thinned glaze inside, then pouring out the excess.

**Rouging:**

Applying translucent stains with a cloth, over an opaque base coat. Also the application of cheek color.

**Score:**

To scratch tiny crisscross lines on areas of greenware that will be attached together with clay slip.

**Scrubbing:**

Application of the initial priming coat of thinned opaque underglaze or glaze. Also, an application of stain with a stiff bristle brush.

**Scum:**

A haze that forms on fired gold and luster from insufficient ventilation in the kiln.

**Seasoning:**

To let the kneaded/wedged clay rest for a day or more to create a dense clay body with a uniform character.

**Sealer:**

A clear fixative to protect unfired finish, (matte, gloss, high gloss and porcelain finish), available in both brush-on and spray.

**Seam Line:**

Outline on casting showing where the mold halves meet.

**Sgraffito:**

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

**Shivering:**

Occurs when glaze and clay body are incompatible. Usually the clay body shrinks more than the glaze, causing the glaze to peel.

**Silk Sponge:**

For decorating, recognizable by short hairs over entire sponge.

**Shoulder Head:**

Doll's head and shoulder in one unit.

**Shoulder Plate:**

Doll's shoulders separate from the head.

**Slab:**

A rolled out section of clay.

**Sleep Eyes:**

Doll eyes that open and close.

**Slip:**

Clay in liquid form.

**Slip Trailing:**

Using slip in an applicator to flow on design.

**Sling:**

Burlap used to cradle clay to make a slab bowl.

**Slurry:**

Clay-body, thinned with water, (creamy consistency) used for joining moist clay sections.

**Soft-Firing:**

Partial porcelain bisque firing (to cone 018 or 019 in kiln sitter) for preparing ware for dust-free cleaning.

**Solvent:**

A dissolving agent used in antiquing and to clean brushes of petroleum base paints.

**Spatter:**

Method of applying small flecks of color to ware.

**Spill Glaze:**

A special effect glaze used over or under glazes, causing them to flow and blend.

**Sponge Veiling:**

The use of a sponge instead of brush to apply colors over a base coat.

**Stagger:**

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

**Stain:**

Decorative, unfired, finish (opaque) applied to bisque or to accent pattern (translucent).

**Stencil:**

A cut out pattern used to apply a design by brushing, sponging or spraying.

**Stick-on:**

Greenware parts attached to the main cast piece, with slip (i.e. handle onto cup).

# Glossary of Ceramic Terms

**Stilt:**

Support used to hold glazed article above shelf during firing.

**Stipple Brush:**

Round brush with straight or angled end that apply color with a series of tiny dots.

**Stippling:**

A method of applying color by pouncing the tip of a brush loaded with color against the ware.

**Stoneware:**

A heavily grog clay body requiring a high firing to vitrify. Available in many colors.

**Stylus:**

A pointed instrument for writing or drawing. Best tool for incising.

**Swivel Head:**

Doll head that turns on a shoulder plate or composition body. Also call socket head.

**Template:**

A pattern or guide used in shaping a clay form.

**Terra-Cotta:**

Natural low and high-fired clay. Also a color.

**Texture:**

Planned surface finish or roughness produced for interest.

**Tint:**

To lightly apply diluted colors over a base coat or coloring a product with another product.

**Tipping:**

Touching tip of loaded brush with other colors for muted shading or accenting.

**Translucent:**

Allows color underneath to show through.

**Underglaze:**

A ceramic color designed to be used under a glaze. Usually applied on greenware.

**Utility Items:**

Dinnerware, cups, canister sets -- functional rather than purely decorative items.

**Vent Holes:**

Small holes made by piecing greenware when attachments have been made to allow trapped gases and moisture to escape from attachments during bisque firing.

**Viscosity:**

Resistance to flow.

**Vitreous:**

Impervious surface (waterproof).

**Vitrify:**

To become a stone-hard, impervious surface.

**Wash:**

Paint and water solution, used for shading and antiquing.

**Wedge:**

To condition and work clay into a bubble free mass for throwing or hand building.

**Wedging Board:**

A plaster block used for conditioning modeling clay.

**Wet Cleaning:**

Another name for the Dust-free Cleaning Technique.

**Wood Glaze:**

Satin glazes with tiny dark specks which form a wood-grain effect when brushed out.

**Wool Sponge:**

Very open texture and soft when wet.



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More information is available at your local library and ceramic studio.

## Internet

<http://duncanceramics.com>

<http://www.maycocolors.com>

You may want to enter "ceramics" into your internet search engine for more links.