

Key Terms  
atmosphere  
pyrometer  
pyrometric cone  
sagger  
raku

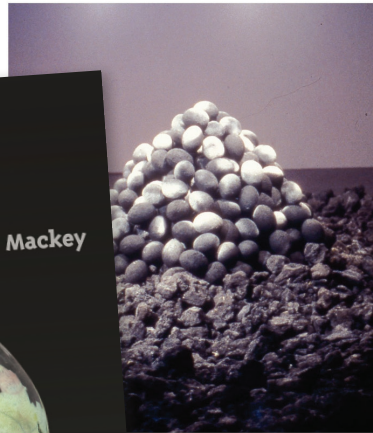
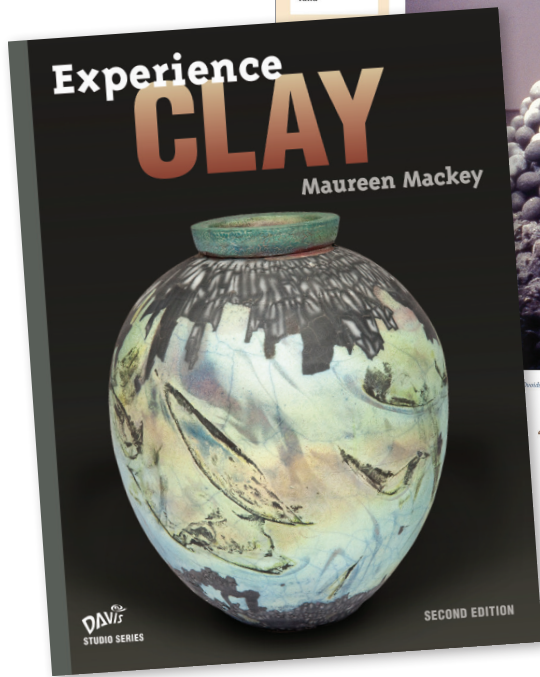
## 6 The Firing Process

The kiln is the potter's most important piece of equipment. Although you can make a clay pot or sculpture with only your hands, to create a durable ceramic form you must fire your work.

Whether simple or elaborate, the kiln should reasonably fit the needs of the studio or classroom. As a student, you may not be firing kilns initially, but you should have a basic understanding of the firing process, types of kilns, firing sequences, and the expected outcomes.

Kilns evolved from simple open-fire constructions that used grasses, wood, or dung for fuel to ones powered by oil, coal, wood, natural gas, propane, or electricity. Firing devices can be as primitive as a hole in the ground or as sophisticated as a computer-programmed structure.

In this chapter, you will:



Woods, 1997. Sagger-fired earthenware and volcanic porcelain, 7' x 21' x 21'

"I think of these sculptures as three-dimensional drawings that will be visually transformed by the long six-day wood fire."  
Don Reitz

# Experience Clay

## SECOND EDITION

By Maureen Mackey

*Experience Clay* is a powerful resource for ceramics teachers and students, including **hand-building** and **wheel-throwing techniques**, **firing**, and **mixed media**. Students are encouraged to discover their unique styles and interests while also learning about **ancient traditions** and **innovations in ceramics throughout history**. The comprehensive Teacher's Edition addresses the unique needs of the ceramics studio classroom.

### Features

- In-depth Studio Experiences that engage and challenge students
- Step-by-step photographs and illustrations that detail fundamental techniques, from combining forms to raku firing
- Outstanding examples of professional quality student artwork
- An entire chapter dedicated to firing, including outdoor and alternative processes
- Interviews with professional ceramic artists and sculptors
- An in-depth Student Handbook with essential information on repairs, clay bodies, firing, and more
- Art history profiles that chronicle significant cultural influences



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### Studio Objectives

Students will:

- understand and differentiate between incision and sgraffito incising techniques.
- decorate a plate using incision and sgraffito on the rim and in the center, achieving a balanced and unified design.

### Materials

- sketchbook or sketch paper and pencil
- leather-hard clay (thrown or hand-built)
- tools for incising or carving
- soft dry brush for removing clay dust and debris
- sandpaper
- colored slip
- rib tool

### Setup

For hand-built plates, have students use the vide and mold method. (See pages 73–74.) Encourage them to think about how a hand-built design will offer a single way to incorporate a border. Normal sketches that are clay surface to be incised, or set into, the clay. Show them examples of work using incision and sgraffito techniques.

### Studio Experience

#### Incised Design: Mishima and Sgraffito

You will use colored slip with two incising techniques—mishima and sgraffito—to decorate a plate. Mishima involves incising or carving lines into the surface of leather-hard clay and painting with colored slip to fill in the design. Sgraffito is the reverse, where slip is painted on the surface first and incising or carving reveals the color of the clay body beneath. Your design should feature one technique on the inside and the other on the rim as a contrast.

Mishima and sgraffito are proven techniques. Mishima is a Japanese word that describes a distinctive method of incision and inlay that originated in Korea during the twelfth century (see page 161 for an example). Sgraffito describes a method of incision that is used on a slipped surface. Ancient Greeks used this technique on their classic red and black ware in the fifth century BC.

#### Before You Begin

- Decide on the shape of your plate—for example, consider making a hand rim. You can either throw or hand-build your plate. When it is leather-hard, trim a foot and cover with plastic to keep it leather-hard.
- Observe patterns around you. Notice how lines accentuate the patterns. Make drawings in your sketchbook to develop a simple design for your piece. Use narrow and wide lines to add variety and intensity. Frame with a border that repeats parts of your design. The design can be abstract or realistic, tight or loose.

Think about how you will transfer lines to the plate. Will you place your design on the clay and trace it? Will you draw it on freehand?

Determine how you want to balance your design. Do you want to emphasize the center of your plate or the border? What mood are you trying to create? What colors fit best with your design?

You will need:

- pencil and paper
- leather-hard plate
- tools for incising or carving
- soft dry brush
- paintbrush to apply slip
- metal rib
- paper towels, sponge
- colored slip

**Fig. 4-36. This plate is designed with sgraffito on the center and mishima on the border.**  
Tom Hughes, October 2001. Unslipped, leather-hard, 8" (20.3 cm) diameter. Courtesy of the artist.

### Check It

Have you successfully used two different incising techniques? How did balance your composition? Of the two techniques, which had the subtler outcome? Which had the stronger impact? Describe what you learned from this exercise. Can you think of other ways in which you would use these techniques again?

### Sketchbook Connection

Get aside a section of your sketchbook for designs that lend themselves to sgraffito or mishima applications. Think of shapes and forms that could be used for this type of surface decoration, and sketch various ways the design could be arranged on the piece. Consider using these ideas for works in a series.

### Rubric: Studio Assessment

4	3	2	1
<b>Design Elements</b> • Line, pattern, color, contrast, balance Use of incision, pattern, and color are very well to show depth of plate. Balance and color are excellent. Contrast and color are very well to show depth of plate. Balance and color are excellent. Contrast and color are very well to show depth of plate. Balance and color are excellent.	<b>Design Elements</b> • Line, pattern, color, contrast, balance Use of incision, pattern, and color are well to show depth of plate. Balance and color are good. Contrast and color are good. Contrast and color are good. Contrast and color are good.	<b>Design Elements</b> • Line, pattern, color, contrast, balance Use of incision, pattern, and color are fair to show depth of plate. Balance and color are fair. Contrast and color are fair. Contrast and color are fair.	<b>Design Elements</b> • Line, pattern, color, contrast, balance Use of incision, pattern, and color are poor to show depth of plate. Balance and color are poor. Contrast and color are poor. Contrast and color are poor.
<b>Media Use</b> • Mishima AND sgraffito techniques, contrasted on rim/interior • Craftsmanship • Clay application See excellent use of both techniques and clay application. Very good use of both techniques and clay application. Good use of both techniques and clay application. Fair use of both techniques and clay application.	<b>Media Use</b> • Mishima AND sgraffito techniques, contrasted on rim/interior • Craftsmanship • Clay application See good use of both techniques and clay application. Very good use of both techniques and clay application. Good use of both techniques and clay application. Fair use of both techniques and clay application.	<b>Media Use</b> • Mishima AND sgraffito techniques, contrasted on rim/interior • Craftsmanship • Clay application See fair use of both techniques and clay application. Very fair use of both techniques and clay application. Fair use of both techniques and clay application. Poor use of both techniques and clay application.	<b>Media Use</b> • Mishima AND sgraffito techniques, contrasted on rim/interior • Craftsmanship • Clay application See poor use of both techniques and clay application. Very poor use of both techniques and clay application. Poor use of both techniques and clay application. No use of both techniques and clay application.
<b>Work Process</b> • Research • Sketches • Reflection/evaluation See excellent use of both techniques and clay application. Very good use of both techniques and clay application. Good use of both techniques and clay application. Fair use of both techniques and clay application.	<b>Work Process</b> • Research • Sketches • Reflection/evaluation See good use of both techniques and clay application. Very good use of both techniques and clay application. Good use of both techniques and clay application. Fair use of both techniques and clay application.	<b>Work Process</b> • Research • Sketches • Reflection/evaluation See fair use of both techniques and clay application. Very fair use of both techniques and clay application. Fair use of both techniques and clay application. Poor use of both techniques and clay application.	<b>Work Process</b> • Research • Sketches • Reflection/evaluation See poor use of both techniques and clay application. Very poor use of both techniques and clay application. Poor use of both techniques and clay application. No use of both techniques and clay application.

Teacher's Edition, Chapter 5: Surface Decoration, Studio Experience.

### How to...

#### Make a Spout

You can create spouts for flasks, teapots, or coffee pots. It is wise to throw a few extra spouts because some spouts fit better than others.

- 1 Throw a small, wide-based cylinder (about 1–1½ lbs.) with a narrow neck, using one finger on the inside to pull the wall upward. You can use a damp sponge on the outside to help smooth the pull.
- 2 Alternate pulling with collaring. Finish the lip with a slight outward curve. Smooth the edge with a chamfer or fine sponge. Allow the spout to stiffen. Mark the spout location on the pot. Place it high enough so that the top of the spout will be higher than the liquid inside when the pot is filled.
- 3 When the spout dries to leather-hard, position the spout on the mark you made. You may need to angle the spout's base so it will conform to the shape of the pot.

**Fig. 4-30. Notice how the artist repeats the protruding ring design on this vessel's body and spout. How would you describe the expressive quality of this piece?**  
Student work, Amanda Fry, October 2000. Wheel-thrown, cone 05 white glaze, parts assembled.

### Handles

Handles can be functional or decorative. For example, in the twelfth century, Cistercian monks in England made vessels with multiple pulled handles that rounded the neck and shoulders of the pot. The handles were purely utilitarian; if one handle broke, another was available—as long as one handle remained, the vessel was still useful.

Handles may be pulled, coiled, or thrown. Consider the following when planning to make a handle:

- Will the handle function as a handle or will it be merely a decorative attachment?
- If it is functional, how will it work? Will you grasp it with the whole hand or just a few fingers?
- If it is decorative, will you place it on the side, shoulder, or neck? How many handles do you want to create?
- Think about the negative space inside the handle's curve. Does it complement the shape of the pot?

**Fig. 4-34. Why are log handles on this serving tray the best type of support for lifting this tea set?**  
Student work, Vicky Goh, Fine Lines Project, 2000. Wheel-thrown, cone 05 white glaze, fired to cone 10 reduction.

### Making a Pulled Handle

Each handle is unique, so you may want to pull many handles in order to have a wide selection. Keep a few extras on hand in case the first one doesn't fit.

- Wedge about 2–3 pounds of clay and shape it into a short, fat coil.
- Grasp the coil in one hand and hold it so that the coil hangs down.
- Encircle the top of the coil with your hand, your thumb facing you. This hand will remain stationary while your other hand pulls.
- Under the holding hand, make a ring around the coil with the thumb and forefinger of your other hand (this will be your pulling hand).

**Fig. 4-35. A pulled handle gives the impression that it has emerged from the pot. What features on this handle implies that it was pulled?**  
Student work, Lisa Winkler, October 2000. Cone 10 reduction, cone 05 white glaze, fired to cone 10 reduction.

Student Book, Chapter 4: Thrown Forms, How to.

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