Ceramics Vocabulary Glossary

**Apprenticeship: A person who works for another person to learn a trade. Many artists are apprentices for professional artists when they first start their careers to “learn from the best”.**

**Balance**: Parts of a picture arranged so that areas seem to have equal visual weight.

**Banding Wheel:** A hand-operated turntable used to rotate your work during the decoration process

**Bas Relief**- A raised or intended design which remains close to the surface like the face on a coin-see nickel.

**Bat:** A flat plate, usually made out of plastic or wood that is placed on top of the wheel head as a surface for throwing on. It is easily removable, allowing work to be transferred from the wheel without damaging the piece.

**Bisque** **/ Bisque Fire:** An initial kiln firing in which all moisture from the clay is removed making a pot ready to be glazed and then fired again (glaze fired).

**Bone Dry:** Completely dry and very brittle state that clay must reach before bisque firing. If the clay is fired before becoming bone dry, there is a chance the water will expand during firing and explode the pot.

**Burnishing:** Method of achieving a shine by rubbing clay or slip with a hard smooth object. Making the surface smooth allows the object to not scratch what it sits on, like mom’s coffee table.

**Calipers:** A tool used to measure the diameter of round forms in order to make sure a lid can fit onto the opening of the form.

**Carving:** Decorating by cutting into the clay surface using various clay tools.

**Centering:** Pushing a mass of clay on center with the centrifugal motion of the potter’s wheel.

**Clay Body:** The substance from which the work is made. Differences between earthenware, stoneware, porcelain

**Coil - Coil Building:** A forming method using rope-like coils of clay, assembled in successive layers to build up walls of vessel.

**Compression (Compressing the base):** In wheel-throwing, using your fingers to gently put pressure on the bottom of the pot will reduce the moisture and create a stronger & denser base. Lack of compression will often result in a S-crack in the bottom. Once you have an S-crack, it will not go away and the piece is ruined.

**Crawling:** A glaze fault where glaze recedes away from an area in firing leaving bare clay to show through. Usually caused by dusty, dirty or oily surface beneath the glaze… *or simply too much glaze!*

**Crazing:**  Very fine cracks in the glaze surface. While technically a fault in glazed wares, it is often sought after for its appearance.

**Design**: To create a work of art by combining elements of art into a planned whole.

**Earthenware:** Low-fired ware, usually still porous after firing. Must be sealed with vitreous glaze to be functional. The most popular form of earthenware is terra cotta.

**Enamels:** A form of low temperature glaze that is applied on top of an already fired higher temperature glaze. Enamels are often lead based, as it is a flux, which works at a low temperature.

**Extruder:** Machine that forces clay through a die to produce tubes of clay shapes.

**Faceting:** Decorative technique involving cutting or paddling flat surfaces on the clay form.

**Flux:** A substance, which causes or promotes melting.

**Form**: A three-dimensional volume or the illusion of three dimensions

**Fluting:** A decorative technique involving carving or forming vertical flutes or grooves in the surface of a piece.

**Glaze:** A coating of powdered ceramic materials usually prepared and applied in water-suspension, which melts and bonds to clay surface in glaze firing.

**Glaze Firing:** The kiln firing in which glazes are melted to form a smooth, glassy surface.

**Glossy Glaze:** Glaze feature that is shiny and reflects light after glaze fire.

**Greenware:** Any dry, unfired piece of clay.

**Grog:** Clay that has been bisque fired and then ground into granules of more or less fineness.  Grog helps open a tight or dense body, promotes even drying, which reduces warping and cracking, and reduces overall shrinkage.  Grog also adds texture to a clay body.

**Handbuilding:** To make pots or other forms by any method other than throwing on a wheel or mechanical process; usually refers to pinching, coiling and slab building techniques.

**High Relief**: A strongly raised or deeply carved design.

**Impressing:** Decorative technique where textured or patterned materials or objects are pressed into the clay surface.

**Inlay:** A decorative technique where a pattern is carved into the clay at the leather hard stage and contrastingly colored soft clay is forced into the decoration. When the clay is a little drier the excess is scraped of to reveal the pattern.

**Kiln:** a furnace in which clay is fired in order to harden it. Kilns may be electric, gas, or wood burning

**Kiln Furniture:** Refractory shelves, posts, and stilts used in a kiln to support the wares. High-fire bricks are most frequently used in high-fire kilns. The bricks and the shelves are stacked and unstacked after every firing.

**Leather-Hard:** Condition of the clay where it has stiffened but still damp enough to carve into. When feeling the clay, leather hard is not sticky but hard and cool.

**Low Fire:** Low-temperature firing range typically below cone 02. Used for most bisque-firing and for glaze-firing earthenware.

**Matte Glaze:** Glaze featuring a dull, non-glossy surface.

**Mold:** A form that will give shape to clay, often plaster or bisqueware

**Opaque Glaze:** Glaze feature that doesnot let light shine through or let the color of the clay showthrough. White glazes are usually opaque

**Oxidation:** A firing there is sufficient oxygen in the kiln to allow the fuel to burn cleanly. The atmosphere of the kiln (oxidation, or reduction) dramatically affects the resulting clay and glaze colors, for example; copper in oxidation is green (as is copper oxide) in reduction it becomes red (more like copper metal).

**Paddling:** Technique of shaping soft or medium leather-hard clay by gently hitting it with a wooden paddle (sometimes textured) to create flat facets (surfaces).

**Pattern**: A principle of design where an element or combination of elements are repeated in an organized way.

**Pinch pots:** Pottery formed by pressing thumb and fingers together on the surface of the clay

**Pinholing:** Glaze defect characterized by fine pinholes in the surface. Can be caused by burst bubbles in glaze surface that are not given opportunity to “heal” at the end of the firing.

**Plasticity:** Quality of moldable flexibility in damp clay. Clay with less plasticity seems to crack or become frail easily during the creating process.

**Porcelain:** High-fired vitreous clay body – usually pure white or “eggshell” in color. Some porcelains may fire translucent when thin.

**Potter:** A person who makes functional ware using clay materials.

**Potter’s Wheel:** A device either manual (foot powered) or an electric rotating wheel head used to sit at and make pottery forms.

**Pottery:** Utilitarian clay ware and/or the making of functional ware.

**Pyrometric Cones or Cones:** Small, slender pyramidal-shaped indicators made of ceramic material formulated to bend at a specific temperature allowing potter to know what temperature the kiln is at and what process of the firing is happening.

**Raku-firing:** a process by which pottery is fired at a relatively low temperature and then moved while hot to a closed container with combustible materials (as paper or sawdust) that ignite and cause a reaction creating colors and patterns in the pottery's surface.

**Rib:** Wide, flat handheld tool used to shape, smooth and/or scrape clay surfaces. Typically made of wood, plastic or rubber and either rigid or flexible, with straight or curved edges.

**Scratch and Slip:** Process of scratching the surface of wet or leather-hard clay in cross-hatch pattern before applying slip and joining pieces. It is part of the “scratch, slip and attach” method.

**Sculpture:** The art of creating a two or three-dimensional representative or abstract forms, especially by carving stone, clay, or wood or by casting metal or plaster.

**Sgraffito:** (in Italian "to scratch") is a decorating pottery technique produced by applying layers of underglaze to leather hard pottery and then scratching off the layer to create patterns and texture and reveal the clay color underneath.

**Shrinkage:** The decrease in the size of a clay object due to drying and firing.  Firing shrinkage is permanent due to chemical and physical changes clay undergoes when exposed to heat.

**Slab Roller:** A mechanized, but usually manually operated, device for rolling out large uniform slabs of clay.

**Slip:** Clay suspended in water, usually the consistency of creamy peanut butter. Used to attach pieces together during the “scratch, slip and attach” method. May also be colored and used to decorate surfaces.

**Slipcasting:** Plaster molds are filled with a watered down slip. The plaster absorbs sediment of clay leaving the remaining moisture over the entire interior surface of the mold. The excess slip is drained off and the cast can be removed from the mold soon after. This approach is used widely by industry and some studio potters.

**Slump Mold:** A mold over which a moist slab of clay is slumped in order to create a vessel form.

**Soda-firing:** a firing technique where “soda” is introduced into the kiln near peak temperature, usually 2350 degrees. The "sodas" used are sodium bi-carbonate, also know as baking soda, and sodium carbonate, which is also known as soda ash.

**Stains:** Substance is a fired blend of metal and ceramic oxides that have been reground into a fine powder. Water is added to make it a liquid.

**Stoneware:** High-fired vitreous ware – literally as hard and durable as a stone. Fires from cone 5 to cone 11.

**Terracotta**: A brownish-red low fire clay, porous after bisque firing. Usually this clay is used for planters because of its absorbency.

**Texture**: An element of art that is the way an object feels or looks like it feels.

**To fire the kiln:** Means to turn on or to take a kiln up to desired temperature depending on energy source- electricity, gas, wood, or alternative sources

**Throwing:** The centering, opening and shaping of clay on a potter’s wheel using the momentum of the wheel to pull plastic clay into various forms.

**Trimming:** At the leather-hard stage, it is the removal of excess clay from a piece using any of a variety of sharp loop tools. Most frequently, the pot is flipped over, centered and re-attached to the wheel. Then, while spinning, a sharp trimming tool is pressed against the piece to trim away the excess clay and create a refined “foot” on the bottom.

**Underglaze:** Colored slips formulated to have low drying shrinkage, allowing application to bone-dry or bisque-fired surface before glazing.

**Unity**: A principle of design which is the quality of having all parts look as if they belong together; achieved by proximity or repetition.

**Variety**: Differences achieved by changing elements in a composition to add interest.

**Vitreous or Vitrified:** Fired clay that has fused together completely, so that the pores between particles are filled with glass and the body can withstand water.

**Warping:** Distortion of a pot during drying process because of uneven wall thickness or drying out too quickly.

**Wax-resist:** A decorative technique where a wax based medium is used to create a pattern, which is then covered, in another coat of glaze or slip. During the glaze firing, the wax medium burns out leaving the decorative pattern behind.

**Wedge/Wedging:** Kneading clay with hands in a rocking or spiral motion, which forces out trapped air pockets developing a uniform consistency of clay through out

**Wood-fired:** Ceramic pieces that have been fired in a kiln that is fueled by wood (wood kiln). Before electricity or natural gas, this was the first way to vitrify clay so it would hold liquids for transportation purposes.

**Anatomy of a Pot:**

**Lip:** The opening of a form

**Body:** The middle portion of a form

**Foot:** The bottom of a form

**Order of the Stages of Clay:**

**Slip**

**Plastic:** Moldable, workable clay

**Leather hard**

**Bone dry**

**Why does clay explode in the kiln?**

A clay form must be bone dry before it is fired. If it is not completely dry, the moisture in the clay will turn to a gas and expand, and try to escape to quickly, causing the form to break into tiny pieces. The thicker the clay, the longer it takes to dry out completely.

If there is an air bubble in the clay, this will also cause the clay to break into pieces. The same thing occurs. Air is a gas that expands as it is heated. Expanding gas needs a place to go. Therefore, trapped air will break open a form as a way of escaping. Make sure to get ride of air bubbles or poke holes in a piece that is enclosed so it does not explode in the kiln.

The last reason for clay "exploding" in the kiln has to do with the thickness. The basic rule of thumb is making the walls no thicker than 1 inch. Anything over an inch will probably not make it through the firing. The thicker the clay is, the more likely it will have an air bubble or will not dry out completely before firing. It is recommended that you keep the walls of the form 1/4 to 1/2 of an inch thick.

**When is it necessary to scratch and slip?**

Always when joining two pieces of clay, scratching and slipping both pieces and blending the seams between the two pieces with more slip or a small coil is what needs to occur. Once the slip is added, the lines should no longer be visible. Scoring allows the slip to get deeper into the surface of the clay, making the clay softer below the surface. This will help make sure that the clay pieces will dry at the same rate, reducing the probability that the added piece will come unattached during the drying process. It is also important to not dry your projects too quickly-especially hand built projects because pieces can become unattached. Once a project is bone dry, you will be unable to reattach anything that may have broken off.