What's happening in the Kiln?

How Temperature Changes Clay: The Stages Clay Goes Through

What is a CONE?

Pyrometric cones are designed to deform at certain moments during a firing. This deforming action allows the kiln to shut off automatically at the proper point (as in the case of the mini bar and Kiln Sitter) or simply to record what happened during the firing (as in the case of the witness cone).

As a kiln is firing up and cooling down, the changes in temperature make some profound changes in the clay. The clay goes from this soft, totally fragile substance to one which is rock-hard, impervious to water, wind, and time. The change is nearly mystical in its complete metamorphosis and might be deemed so if it were not so common.

Temperature (approx.)		Cone	What's Happening
°F	°C		
212	100		Any remaining atmospheric water converts to steam.
420	220		When cooling, cristobalite suddenly shrinks.
572 - 1470	300 - 800		Burn-off of carbon, sulfur and organics.
660-1470	350 - 800		Chemically combined water driven off.
1060	573		Quartz inversion occurs.
1650	900	011	Sintering begins to occur.
1730	945	08	Common bisque temperature.
1850-2135	1005-1145	06 - 3	Earthenware vitrification range.
2160-2290	1165-1210	4 -7	Mid-range vitrification range.
2315-2535	1225-1390	8 - 14	High-fire vitrification range.

What is Glazing?

Glazing is when you paint a thin layer of mineral and glass onto a fired or unfired piece.

Glaze VS Underglaze

Underglaze: can be applied onto an **unfired** piece. You can paint all over your piece (inside-outside-bottom).

Glaze: only can be applied onto a **fire** piece. Liquid glass that can be put everywhere except the bottom. Also, make piece food safe.

When people get the kit with underglazes. They are allowed to paint their stuff before they drop off the pieces to the studio. The studio will fire them and add the glossy clear glaze. The pieces will be ready to be used and food save.