INTERMEDIATE RAKU

Introduction

In our beginning raku classes, we often compare raku to chess: we can teach you the moves in an afternoon, but you can spend a lifetime mastering the game. The purpose of this flyer is to introduce you to some advanced moves that will expand your color palette and creative possibilities.

Oxidation vs. Reduction

During raku firing, you are balancing or juggling oxidation and reduction atmospheres in both the kiln and the reduction chamber to get the effects you want. Oxidation and reduction are not really polar opposites: they represent more of a continuum. Either color result can be desirable.

A) **Oxidation Atmosphere:** this means that oxygen is present in the firing atmosphere. Copper oxides fired in oxidation atmospheres produce shades of green and blue, and also produce metallic flashes and iridescence. Think of a copper or bronze statue standing in the outdoors and weathered by the elements.

B) **Reduction Atmosphere:** oxygen is not present in this firing atmosphere. Reduction atmospheres in raku are rarely completely oxygen-free, but oxygen is present in lesser percentages than in the atmosphere we breathe. Copper oxides fired in reduction produce darker shades, from tomato red to oxblood red to purple. The same metal (copper) changes color in reduction because sustaining the fire requires oxygen. If there is insufficient oxygen in the atmosphere inside the kiln or reduction chamber, the fire will rip the oxygen it needs out of the metallic oxide in the glaze.

C) Influencing the Atmosphere: you may not be able to completely control the atmosphere in raku, but you can influence it toward your desired color results. You can induce reduction in either the kiln or the reduction chamber (or both), or promote oxidation before placing pieces in the reduction chamber.

Reduction in the Kiln:

a. The first step toward reduction in the kiln is altering the position of the primary air intake using the screw-mounted plate, at the back of the burner. Screw the plate toward the burner to restrict air flow into the burner. This creates a fuel-air mixture richer in fuel, so less oxygen is sucked into the kiln. If you screw the plate down too far, you will starve the burner and extinguish the flame.

b. A second step to promote kiln reduction is to partially block the kiln flue with a kiln shelf or brick. This prevents the full exhaust of combustible gases in the kiln.

c. Start reduction in the kiln when the glazes begin to melt and bubble. At this point, there is enough heat contained in the kiln to force a complete burn of the fuel.

Glaze combination #1 80% PG805 White Crackle 20% PG811 Blue Dolphin



Glaze combination #2 75% PG805 White Crackle 25% PG802 Copper Flash



Glaze combination #3 50% PG805 White Crackle 50% PG812 Copper Ridge



Glaze combination #4 50% PG813 Michigan Patina 50% PG811 Blue Dolphin



Glaze combination #5 75% PG805 White Crackle 25% PG807 Opal Shimmer



Glaze combination #6 50% PG808 Beetle Juice 50% PG811 Blue Dolphin



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