

Raku Kiln Operation
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Loading the kiln. Load your work onto the kiln shelves within the raku kiln. Then lower the “raku hat” part of the kiln using the crank on the pole next to the kiln. Make sure you guide the “hat” down so that it clears the shelves. Lower the “hat” all the way to the short brick wall around the base of the kiln. Use leftover pieces of kaowool to cover any gaps. However, do not block up the spy hole – you will need that to remain open so you can see when your work is hot enough to pull. Also, take care with the hole on top of the kiln. You may block this halfway with a small piece of kiln shelf, but do not cover it completely – you need to leave space for the hot gases to flow up and out the top of the kiln. Do not cover the burner ports – they need a little open space around them to operate. Do not fiddle with the discs that can be screwed tighter to the back of the burners – these should always be left with at least ¼ inch of airspace remaining – the burner must have proper airflow to operate correctly. Throughout this whole step, proceed with due caution if the kiln has been used recently – surfaces may be hot. Do not mess with the height of the lowest shelf in the kiln (but see your instructor if you have questions.)

Lighting the kiln. A gas valve is ON if it’s in line with the pipe. It’s OFF if it is perpendicular to the pipe. First, light your lighting device (we use fire starters), then hold the lighted fire starter to the open end of the burner, then turn the gas on. You want to avoid allowing large amounts of gas to leak out of an open valve unlit – when the gas is finally lit, you’re likely to have an explosion!

Turning off gas. Turn the valves to each burner so they are perpendicular to the pipe. Or turn off any one of the valves further away from the kiln – this cuts the gas off before it can come out the burners. If there is an emergency, you will need to know how to turn off the gas fast.

Gas turn-ups. So as not to shock the ware, usually we turn the gas burners on only partway (about 1/3 on). Every 10 minutes or longer, you can do another turn-up, until the gas is all the way on. Three turn-ups is gradual enough. Larger and thicker pieces need more gradual heating (so they won’t crack).

Firing. Fire for about an hour or so, until the kiln is hot enough. There is no way to tell you an exact way to tell when the kiln is ready – you need experience, and it is fine to get advice from your instructor. Everything within the kiln will be glowing – the shelves, the ware, and the air itself. Shiny glazes will look like they have been covered with honey. If you see large bubbles, wait until these have calmed down. Be cautious about looking into the spyhole – very hot gases are coming out. Stay four or more feet away from the kiln, and hold your body and head out of a direct line with the spyhole. Be cautious about gazing into a glowing kiln – it may not be good for your eyes to view it. We have kiln glasses for your use.

Prepare for the pull. Before your work is hot enough, assemble what you need for the pulling step. Up to two people can pull work from the kiln. Each person will need a pair of tongs, a face shield, and Kevlar mittens (these are the thick yellow kind). We keep these in a tall gray locker in the glaze room. Each person pulling should be appropriately dressed. Do not wear anything flammable. It is best to wear long cotton pants and a long sleeved cotton shirt. Shoes must be closed at the toe – they should also be sturdy, stable, and preferably made of leather. If you dropped a pot on your shoe, would it protect your foot? That is the question to answer. The best safety shoe for a raku firing is a sturdy leather work boot. The other preparation task concerns what you will put your work into after you pull it. Choices are generally a dirt trench or a metal can. Either the trench or the can is lined with combustible material such as paper or sawdust. Set this up before your kiln reaches temperature.

Pulling. If you have a partner who is also pulling, agree beforehand on who will occupy what space – you don't want to run into each other. Make sure you and any other puller are suited up properly. When the kiln is at proper temperature, turn off the gas by turning the burner valves perpendicular to the pipes. Crank the “hat” up, guiding it gently past the shelves so that it does not disturb your work. Everything is really hot now – use caution! Pull your glowing work out of the kiln with tongs. Touch the work only with tongs – the mittens are not rated for contacting the hot work directly. Put the hot ware into the dirt trench or the metal container, then cover it by shoveling dirt over or by placing the metal lid on the metal container. Note: if you add sawdust, use caution. Very fine sawdust can ignite while still in the air, so stand back from it.

Smoking the work, then removing it. Allow the pulled work to rest in its trench or container for 10 minutes, or longer (as long as you want). Then, uncover the work. Protective gear for this step is simply tongs – mittens and face shield should not be needed. But don't touch the ware with your bare hands yet – it's too hot. You may rest the work at this stage on the bare dirt, or on the concrete flooring of the kiln pad. Cool the ware by sprinkling drops of water on it until the ware no longer sizzles. At that point, you may pick the work up with tongs and gently immerse it in a bucket of water. After several minutes, you may pull the ware out of the water with your bare hands.

Finishing up. At this point, you're almost done. You may take the ware inside and scrub it up if you want, or leave it like it is. Be sure to put all tools away in their designated storage places. Check the area, cleaning up mess. Be especially careful not to leave fires burning on the ground. Sometimes people allow sawdust to keep burning – it can burn for hours, and this is a real hazard.