

**Linda Arbuckle**

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| Majolica (Arbuckle) | Cone 03 | Cone 05 | Smooth, white, opaque. Colorants w/flux usually applied in a thin wash to raw glaze surface. Does not move in firing. May crawl if thick in corners or pinhole over rough-trimmed surfaces. Fire w/small 03 cone in the sitter to give a small 04 tipped to about 2 o'clock in front of the peep hole. Use of chrome in decoration may cause sufficient fuming to make the background blush pink in high tin glazes (above 5%). If this is a problem, drop the tin a bit, and add that amount x 1.5 of additional zirconium opacifier. For dipping flocculate the glaze. Demo online here: <a href="https://ceramicartsnetwork.org/daily/article/Video-of-the-Week-How-to-Flocculate-a-Ceramic-Glaze-for-Better-Coverage">https://ceramicartsnetwork.org/daily/article/Video-of-the-Week-How-to-Flocculate-a-Ceramic-Glaze-for-Better-Coverage</a> |
|---------------------|---------|---------|--|
| frit 3124           | 65.8    | 66.6    |  |
| F-4 or Minspar 200  | 17.2    | 23.0    |  |
| feldspar            |         |         |  |
| EPK                 | 10.8    | 2.3     |  |
| neph sy             | 6.2     | 8.1     |  |
|                     | 100.0   | 100.0   |  |
| + tin               | 4       | 4       |  |
| + zircopax          | 9       | 9       |  |
| + bentonite         | 2       | 2       |  |

**Majolica Colorant Suggestions:**

Gerstley borate is no longer being mined, and was erratic in quality when it was available. It made color pastel through very fine reticulation (break up) on the surface, and although I used GB when I began majolica, I now use frit as a flux (with bentonite added) or commercial majolica decorating colors. Colorants with just frit settle quickly, have limited brushability, and are very powdery once dry (they smear easily if you wax over). Some artists, like Matthias Ostermann, use this quality to work the surface like pastels. My methods resist the painted motifs with wax before a solid ground color is laid in, and the addition of bentonite or use of CMC gum to the frit + colorant mix aid brushing and harden the raw surface. Bentonite doesn't mix easily w/water, so be SURE to mix dry bentonite, frit, and colorant first, then add water. Commercial companies mix frit + colorant + kaolin + CMC gum + Veegum T for their products.

I use frit 3124. Others will work, with color reactions influenced by frit chemistry. To aid brushability, you may add a small amount of glycerin (drug store item), or a few drops liquid CMC gum to the liquid mix. Too much gum makes the mix gloppy and it becomes difficult to make fine lines and get solid color coverage.

For things that melt easily at low-fire temps (copper, cobalt, iron) try 1 part colorant, 1 frit, 1 bentonite by volume. I mix up small jars of color and measure by the teaspoon. For more refractory ingredients, test 1 colorant, 2 frit, ½-1 bentonite. For my black, it seems to still smudge when I wax if I only use ½ bentonite. Increasing to 1 part seems to solve that.

**1 part colorant, 1 frit, 1 bentonite**

Copper (blue-green), cobalt (blue), manganese (brown to plum w/3110), iron (brown)

**1 colorant, 3 frit, 1 bentonite**

Chrome (grass green), rutile (rusty orange), titanium (ivory), most stains

**Note** that stains intended as "body" stains – to color clay bodies – are too refractory, even w/flux added, to make a smooth surface on top of majolica glaze. Some of those stains: Mason 6020 Manganese-alumina pink, 6485 Titanium yellow, 6319 Lavender. I find that Vivid Blue is also rather refractory. It is usable, but needs around 4 flux to 1 stain to 1 bentonite.

Some AMACO Velvet underglazes work for decorating on top of majolica base glaze, but others are too refractory - test.

**AMACO discontinued the GDC series** of products for majolica decoration December, 2012. Mayco Stroke-n-Coat colors work. I tested Spectrum Majolica colors, and at cone 03 they had broken color and looked fluxed more than I usually use. Might be useful on the 05 version of the majolica glaze.

The colors will inter-mix, but as with the colorants they are made from, some are strong colors, others weaker, so you may need to test amounts. E.g. 3-4 parts Yellow and ½ - 1 part turquoise makes a nice chartreuse. 4-5 parts yellow and one part black makes avocado.

**Soluble colorants:** cobalt sulfate (blue), copper sulfate (turquoise), manganese chloride (plummy brown), chrome chloride (green). All are toxic raw. Do not inhale, ingest. They are also absorption hazards: do not handle these w/o gloves. Soluble colorants are dissolved, rather than suspended in water, so they wick with the water making a very uniform ground color and leave a soft edge. If you want a white areas, or to retain motif colors, areas must be waxed before applying soluble colorants. Over-wetting the glaze when applying solubles may move raw glaze and cause color to migrate thru the pot wall and/or crawling. Too much water on the raw glaze may cause crawling in the fired glaze.

**Majolica** Thanks to the many people willing to share information!

|  |       |  |      |   |                                       |      |
|--|-------|--|------|---|---------------------------------------|------|
| <b>Liz Quackenbush Majolica 03</b>   |       | <b>Majolica (Siebert) 06-03</b>  |      | Seibert notes:  |                                       |      |
| frit 3124  | 68.6  | Frit 3124  | 72   | For black majolica substitute 8% Mason #6650 black (cobalt free) for the zircopax.<br>Terry says she occasionally does a soft fire to 018 to sinter the glaze and make it less fragile for working on. Terry sometimes sprays a very thin coat of clear over her majolica. She says this brightens colors, but may also make them too glassy. |                                       |      |
| Frit 3110  | 9.8   | flint  | 10   |   |                                       |      |
| Ball clay  | 6.9   | EPK  | 12   |   |                                       |      |
| Silica   | 14.7  | zircopax   | 10   |   |                                       |      |
| +Zircopax  | 10    | Decorating mix: 25% stain or oxide w/75% frit 3124 (adjust for refractoriness of oxide or stain) and a tablespoon of liquid laundry starch. Generally fired to 04. |      |   |                                       |      |
| +Bentonite   | 0.5   | Optional pre-fire to cone 018 to harden base glaze for easier decorating.  |      |   |                                       |      |
| Liz says this is brushable (may be somewhat deflocculated from frit 3110). She uses it thick. Crazes a bit, fatty majolica. May run a bit. She suggests mixing it w/Arbuckle majolica. |       |  |      |   |                                       |      |
| <b>Majolica (M.J./Andrea) 04</b>   |       | <b>Matthias's Majolica cone 05</b>   |      |   | <b>Wichita Doo-Dah Majolica 04-03</b> |      |
| frit 3124  | 77    | Frit 3124  | 83   |   | frit 3124                             | 78.6 |
| whiting  | 7     | ball clay  | 8    |   | ball clay                             | 7.1  |
| Kona F-4 spar  | 14    | EPK  | 8    | flint   | 14.3                                  |      |
| EPK  | 2     | + rutile   | 1    | <b>Total</b>  | <b>100</b>                            |      |
| Superpax   | 15    | +Zircopax  | 11   | + zircopax  | 7                                     |      |
| +Bentonite   | 1     | Also known as Cochrane Majolica: CM 11/90  |      |   |                                       |      |
| +Epsom Salts   | 0.2   |  |      |   |                                       |      |
| Overglaze colors: 50% stain or oxide, 50% frit 3124, .2 Epsom salts, 1 tsp. Sta Flo liquid starch.   |       |  |      |   |                                       |      |
| <b>Walter's Majolica 04-03</b>   |       | <b>Steve Howell Black Majolica</b>   |      | <b>San Diego State U Majolica - C 6</b>   |                                       |      |
| frit 3124  | 34.9  | Frit 3134  | 43   | Dolomite  | 2.3                                   |      |
| frit 3195  | 23.3  | Silica   | 13.5 | Whiting   | 8.7                                   |      |
| frit 3134  | 23.3  | Kaolin   | 33.6 | Feldspar  | 35.8                                  |      |
| neph sy  | 16.3  | Custer feldspar  | 6.7  | EPK   | 5.8                                   |      |
| EPK  | 2.3   | Wollastonite   | 3.1  | Flint   | 35.7                                  |      |
|  | 100.1 |  | 99.9 | Frit 3124   | 10.5                                  |      |
|  |       | +6650 Mason black  | 7    | +Zircopax   | 1                                     |      |
| + zircopax   | 12    |  |      | +Bentonite  | 2                                     |      |
| + bentonite  | 2     |  |      | +Epsom salts  | 0.6                                   |      |
|  |       | Cone 03 visual   |      | Use 50 stain/50 frit over. Add CMC gum soln. for better brushing and harder raw surface.  |                                       |      |

**Other lowfire recipes**

|   |   |   |
|---|---|---|
| <p><b>Deep Alkaline Turquoise 04-03</b></p> <p>frit 3195 19<br/>frit 3110 57<br/>Gerstley borate 10<br/>EPK 9<br/>flint 10<br/>copper carbonate 5<br/>+ bentonite 2</p> <p>May run if very thick. Pearly thinner; deep, watery turquoise thicker. Crazes. Soft glaze. Great over colored slips.</p> | <p><b>Amber Assault Base 04- 03</b></p> <p>Frit 3134 60<br/>Wollastonite 2<br/>Strontium carbonate 3<br/>Kaolin 21<br/>Flint 0.6<br/>Kona F-4 feldspar 14<br/>+ bentonite 2</p> <p>Looks good over slips. <b>amber:</b> + 4-6 % burnt umber; <b>transp. green:</b> + 4% copper carbonate <b>olive:</b> Copper carb 1 + burnt umber 4</p>  | <p><b>Black Luscious 03</b></p> <p>spodumene 21.2<br/>frit 3134 53.7<br/>flint 16.9<br/>EPK 8.3<br/>+ bentonite 2.0<br/>+ Mason 6650 stain 10.0</p> <p>Opaque patent-leather black. Does not move much in firing.</p> |
| <p><b>Black Rosie's Waxy No GB cone 03</b></p> <p>flint 14.6<br/>frit 3134 68.8<br/>EPK 16.4<br/><u>bentonite</u> 2.0<br/>TOTAL 101.8<br/>+ 6650 Mason black stain 10.0</p> <p>Smooth, waxy, doesn't move.</p>  | <p><b>Pete Pinnell 03 Basic Clear</b></p> <p>Frit 3124 70<br/>strontium carb. 10<br/>neph sy 10<br/>ball clay 10<br/>+ bentonite 2</p> <p>Apply thinly.</p>   | <p><b>Black Oxide Mix for slip or glaze</b></p> <p>iron oxide 20<br/>cobalt 15<br/>manganese 10<br/>chrome 5</p> <p>Mix by weight and use like a stain.</p>   |
| <p><b>03-04 Base Slip (white) for leatherhard application</b></p> <p>ball clay 40<br/>kaolin 20<br/>neph sy 15<br/>talc 15<br/>frit 3124 10</p> <p>Deflocculate w/ a pinch of soda ash or a few drops sodium silicate for better brushing and fluidity w/less water.</p>                            | <p><b>Slip color suggestions</b></p> <p>white 5% zircopax<br/>green 3% chrome + 3% copper carb.<br/>yellow 10% yellow body stain, e.g. Mason 6485 titanium yellow<br/>blue 1-2% cobalt carbonate or 6-10% blue stain<br/>pink 12-15% pink body stain, e.g. Mason 6020 pink. Can be toned a bit w/2% rutile if desired<br/>black 12-15% black stain or black oxide mix. Mix the base w/Redart in place of ball clay. Drop frit to 8.</p> |   |



**Terracotta:**

**Arbuckle 04-03**

|                                 |     |
|---------------------------------|-----|
| Redart                          | 50  |
| XX Saggar                       | 20  |
| fireclay                        | 20  |
| flint                           | 12  |
| talc                            | 5   |
| spodumene                       | 3   |
| neph sy                         | 5   |
| <u>very fine grog (90 mesh)</u> | 0-3 |
| barium carb.                    | 0.5 |

Barium is needed to bind soluble salts and thus prevent scumming.

**Pete Pinnell's Real Authentic Lip-Smackin' Smooth Easy Terra Sigillata**

color suggestions to 1 cup liquid sig:  
 white = + 1 tsp. Zircopax or tin.  
 off- white = + 1 tsp. titanium dioxide.  
 green = + ½ tsp. chrome oxide  
 blue = + ½ tsp. cobalt carb.  
 black = + 1 tsp. black stain  
 plum = + 1 tsp. crocus martis

In a 5 gal. bucket put **28 lbs (28 pints or 3½ gal.) of water**. Add **14 lbs. dry clay**. XX sagger works well for white base, RedArt for red. Add enough **sodium silicate to deflocculate (a few tablespoons)**. For red clays use **2 teaspoons sodium silicate and 1 tablespoon soda ash**. Allow to settle. Overnight is average. Less plastic red clays (such as RedArt or fire clay may require only 6-8 hours, while very plastic clays like XX Sagger or OM4 ball may take up to 48 hours). Remove top ½-b w/o disturbing the mixture (siphon off). This is the sig. Throw the rest away; do not reclaim.

Terra sig is best when the specific gravity is about 1.15. Useful range is 1.1-1.2. Specific gravity is measured by weighing out 100 gms of water, marking the volume, and weighing the same volume of the sig. Divide the weight of the sig by 100. If too thin evaporate. If too thick allow to settle longer. Apply sig to bone dry greenware and buff. Pete uses "patinas" of 1 gerstley borate + 1 colorant as a thin wash over bisqued sigs, applied and rubbed off. Works on textured areas.

**Flocculation:** perpendicular particle (house of cards) orientation of ball clay and/or bentonite. Particles "floc" together, sticking together end-to-middle. Thickens the liquid. Good for glazes applied by dipping, good to thicken glaze for re-glazing or application to over-bisqued work. Prevents glaze settling into a hard brick in the bottom of the bucket over time. Materials used to flocculate: **Epsom salts** (magnesium sulfate), calcium sulfate.

**Note:** see *The Potter's Dictionary by Hamer* (bibl) for extensive discussion of flocculation and deflocculation.

**Deflocculation:** parallel (deck of cards) ball clay and/or bentonite clay particle orientation, slight repulsion between particles. Fluid with less water. Good for brushing, low-shrinkage slips, casting slips, making terra sigillata. Causes glazes to settle into a hard, dense mass in the bottom of the bucket. Can cause "streaming" (last run of glaze takes off all glaze under) when used for dip application of glaze, can make sharp edges hard to glaze when dipping. Materials used to deflocculate: **sodium silicate, Darvan, soda ash**. Adding too much deflocculant destroys the effect. Neph sy, some frits and lithium carbonate used as glaze ingredients will have a deflocculating effect on glazes. "Soft" water will also deflocculate glazes.

### What is majolica?

Majolica in the historic sense is earthenware with a white, tin-opacified, viscous glaze, decorated by applying colorants (often with a brush, using calligraphic brush work) on the raw glaze surface. The viscosity of the glaze restricts flow as the glaze melts in firing, giving a glossy surface that maintains the line quality of the surface decoration. Traditionally, the glaze was lead-fluxed, and the beautiful ambers and greens seen in the historic decoration result from iron and copper, respectively, in combination with lead.

Tin-glaze earthenware began in the Middle East. When people there became a political force, they conquered northern Africa, came across Gibraltar into Spain, and brought this ceramic knowledge with them. Spanish potters then made Muslim-inspired works in this method. Italians imported this ware from the Spanish port of Majorca, calling it **majolica** ware. When the French imported it from Faenza, they called it **faience**. When the Dutch became proficient with these techniques and exported quantities of ware from Delft, it was called **Delftware**. Some confusion exists, as "majolica" and "faience" are sometimes also used to describe a method of using bright, transparent lead glazes over relief ware, like that produced by the Minton Co. in England in the 19th century. This is a different usage, thought to originate because the bright colors of the transparent lead glazes reminded people of colorful Italian majolica. Several sources maintain that "maiolica" (pronounced *my o li kah*) is tin-glazed ware, and "majolica" (pronounced *mah jol i kah*) is the transparent lead glaze. Museum and scholarly writings use both spellings for tin-glaze, and a variety of pronunciations, with no consistent rule. Guided by my pronunciation of Majorca, I say *my o li kah*, and spell it with a "j".

Contemporary majolica in the U.S. is usually un-leaded, although European potters may use lead. The high calcium in most majolica glazes makes for a durable glaze that holds up to use as tableware.

**Advantages of Majolica ☺**

- The viscous glaze does not move when fired: brush work stays crisp, no runny glaze to chip off shelves, dry-footed areas need less margin on pot bottoms or lid seats
- Because the raw glaze absorbs the color from the brush readily and does not move in firing, direction of brush marks, speed of the brush, and loading of the brush show in the fired decoration, adding painterly, expressive qualities to the marks.
- Thick glaze blankets the piece: forgives small handling errors.
- The kiln is a passive tool: results are more predictable firing-to-firing. Someone else could fire your work and achieve the same results (easier to share kilns).
- Bright palette: commercial stains give easy access to a range of pinks, oranges, yellows, purples that work well with the blue, green, and rust available with oxides.
- Inexpensive color: it takes less colorant to put a thin wash of color on the glaze surface than to color a slip or a glaze

**Disadvantages of Majolica ☹**

- The viscous glaze does not move when fired: lumps and drips in application remain, pin holes, etc. do not heal over in firing, and thick glaze may crawl.
- Because the raw glaze absorbs the color from the brush readily and does not move in firing, direction of brush marks, speed of the brush, and loading of the brush show in the fired decoration, and may reveal hesitations, touch-ups, and direction of background, painting around motifs, etc. that may be a distraction to the aesthetic impact of the fired object.
- Thick glaze blankets the piece: may cover small details in clay handling.
- Kiln is a passive tool: color is uniform and may look flat, does not describe the form. No gifts from the kiln gods.
- Bright color: may look garish or entire palette may look too pastel and lose impact.
- Thin skin of color not suitable for floor tile where it will be harshly worn down.

Palette selection is relative and involves personal choices. All the Josef Albers color study theories that apply to painting apply here as well. A color that looks pale as a test may look better next to its complement or mixed with an analogous color. Color that seems too flat may be varied by "loading" the brush with more than one color so that it will modulate in the brush stroke. Colors can also be mixed before applying (testing is advised), or can be layered (many are at least somewhat translucent).

**Glaze application**

Glaze application is important because the glaze does not move in firing. For me, dipping is the method of choice. Glazes that settle quickly and don't build up an even glaze coat may need to be flocculated with additions of Epsom Salts (2- 3 tsp. per 5 gal. bucket). Bill Brouillard reported using some sodium silicate to deflocculate his glaze and aid in brushing it onto large platters. He said this also makes the raw surface less fragile. Lumps and drips of glaze can be sanded with fingers or fine (e.g. 400 grit) sandpaper. Remove dust with a soft brush or a barely damp clean sponge before decorating. If wax resist areas curl up as they dry, the piece was dusty and/or wax is thick and should be thinned w/water. Gently heating w/a hair dryer will soften the curled part and it may be put back down.

Often majolica has problems with pin-holing. Rib trimmed areas smooth. Dampen bisque slightly before dipping in glaze to reduce air pinholes in the raw glaze, and deter too thick a glaze coating. Rub with a finger to fill pinholes in the raw glaze.

Over-wetting the bisque or dry raw glaze may cause fine drying cracks in the raw glaze that will crawl in firing.

White dotting in colored areas is another common problem. [Ceramics Monthly](#) has answered this twice and suggested zirconium in the glaze gassing in firing and/or materials in the clay body releasing gasses during firing. Whatever the source of the gas bubbles (I believe it's sulfur compounds contaminating the clay), I've found more problems on pieces with thicker

glaze, and thicker wall cross-section. Bisquing higher (assuming the body does not get too mature to accept glaze well) helps. The clay body used is a major influence. Very fine grog (90 mesh) or no grog is better than sandy, groggy (e.g. 48 mesh) clay, although I've worked w/grog in the clay and ribbed it smooth. My current experience says the dots are gassy clay, and changing clay bodies or re-formulating may help.

### **Troubleshooting:**

- If you have a partially empty kiln load, it may help to place an empty shelf above the top shelf of work to keep it from heating more quickly than the rest of the kiln.
- If you fire very slowly the color may start to break up or sink into the molten glaze and look faded.
- If you have white dotting only on some pieces in a kiln load, check the glaze application thickness and try to apply thinner. Bisquing higher may help burn out gassy materials and obtain a thinner glaze coat as the bisque will be less absorbent, or dampen the piece more before dipping. Trying other clay bodies may help.

My thanks to other majolica artists who have shared their information through the ceramic grapevine and intrigued me with their work.

## Resources

### Organizations:

NCECA National Council on Education for the Ceramic Arts. Non-profit organization. Sponsors annual conferences around the U.S. (highly recommended!), publishes the NCECA Journal & annual members' directory, sponsors a biennial juried Clay National show in conjunction with the conference. Home page: <http://nceca.net>

### Colorant suppliers:

Standard Ceramic Sources for ceramics colorant stains other than widely-available Mason stains  
 Many local suppliers in the east deal with Standard, and will order items not in stock if you ask.  
 P.O. Box 4435 Source for crocus martis for coloring sigillata, stains. K-44 and K-42 are two nice purple stains  
 Pittsburgh, PA 15205 they carry. Their 417 red earthenware works for majolica fired to cone 03.  
 (412) 276-6333 <http://www.standardceramic.com/>

### Electronic resources:

See also the links page at: [http://lindaarbuckle.com/arbuckle\\_links.html](http://lindaarbuckle.com/arbuckle_links.html)

accessCeramics Online image library of contemporary ceramics. Done via Flickr by Lewis and Clark College, Portland, OR <http://accessceramics.org>

ArtAxis.com Online pages for contemporary ceramic artists. Good place to see work. <http://artaxis.org/>

Hyperglaze Iix Excellent glaze calc and data program by Richard Burkett that runs on a Macintosh, and now has a PC version. <http://hyperglaze.com/>  
 Richard Burkett  
 6354 Lorca Dr.  
 San Diego, CA 92115

IMC web site Diverse technical resource pages from Tony Hansen, author of Insight glaze calculation program et. al. <http://digitalfire.com/>

Italian Renaissance Ceramics Tour @ National Gallery <http://www.nga.gov/collection/gallery/itacer/itacer-main1.html>  
 Tour of great Italian majolica online from The National Gallery.

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|---|--|
| <b>Brushes and Hardware</b>   | Look for brushes that are soft, resilient, and hold liquid. Hake brushes, Japanese brushes, and some synthetic brushes work well. Try watercolor brushes as well. Squirrel watercolor brushes & china mops work beautifully, but the good ones are expensive. Dagger brushes (short handle, bristles about as long as the handle) are available from many of the major brush manufacturers at art supply outlets and are great for pulled stripes. |
| Dick Blick Art Supplies   | Check out the watercolor brushes. <a href="https://www.dickblick.com/">https://www.dickblick.com/</a>  |
| Marx/Gordon Brush<br>6247 Randolph St.<br>Commerce, CA 90040<br>(800) 950-7950 x101 | Source for wholesale order of the 636 dagger liner brushes. \$75.00 minimum order. One of my favorite line brushes: <a href="http://www.marxbrush.com/marxbrush/Page9.htm">http://www.marxbrush.com/marxbrush/Page9.htm</a>  |
| Thorpe Rolling Pin<br>P.O. Box 4124<br>Hamden, CT 06514                             | Great heavy-duty rolling pins. 18", ball bearings in the handles. Very durable. Must purchase by case of 6. (800) 344-6966.  |
| St. Louis Art Supply  | Check out the watercolor brushes. <a href="https://shop.stlartsupply.com/collections/brushes">https://shop.stlartsupply.com/collections/brushes</a>  |

## Bibliography

| Title  | Author                       | Notes   |
|--|------------------------------|---|
| <b>Art philosophy, aesthetics, and psychology</b>                            |                              |   |
| <i>Art And Fear: Observations on The Perils (And Rewards) of Artmaking</i>   | Bayles, David & Orland, Ted. | Thoughtful, readable short book that deals with blocks and fears that creative people face. Everyone in creative pursuits should read this.                       |
| <i>Art And Visual Perception: a Psychology of The Creative Eye</i>           | Arnheim, Rudolf.             |   |
| <i>The Art of The Maker</i><br><i>The Culture of Craft</i>                   | Dormer, Peter                | The first about the role of craft (i.e. skill) in art-making, the other an anthology about the relevance of handcraft in society.                                 |
| <i>Ceramics</i>  | Rawson, Philip.              | Part of Rawson's series of art appreciation subjects. Excellent information about looking at pottery and meaning, altho wordy reading.                            |
| <i>Conceptual Blockbusting, A Guide to Better Ideas, 3<sup>rd</sup> Ed..</i> | Adams, James L.              | Helpful guide to expanding your thinking and creative problem-solving.  |
| <i>The Culture of Craft; Status and Future</i>                               | Dormer, Peter, ed..          | Excellent book on the issues surrounding hand-made items and their implications by thoughtful authors. Highly recommended.  |
| <i>Architectural Ornament: Banishment and Return</i>                         | Brolin, Brent.               | Orig. published as: <i>Flight of Fancy: The Banishment And Return of Ornament</i> . Enlightening discussion about the history of ornament and contemporary views. |
| <i>The Sense of Order: a Study in The Psychology of Decorative Art</i>       | Gombrich, Ernst.             | About thinking and analysis of man's perception of pattern, the meaning of ornament, and more.  |
| <i>The Story of Craft; The Craftsman's Role in Society</i>                   | Lucie-Smith, Edward.         | Evolution from a time when everything was craft to the intellectualization of art and its effect on craft.  |

| <b>Brushwork, decoration</b>   |                                 |   |
|--|---------------------------------|---|
| Video brush demo   | Alan Caiger-Smith               | <a href="http://www.youtube.com/watch?v=aWkRJ-u9YEc">http://www.youtube.com/watch?v=aWkRJ-u9YEc</a><br>A must see for how to use brushes. |
| <i>Brushes; A Handbook for Artists and Artisans</i>  | Turner, Jacques                 | Brush-making history, materials, and techniques   |
| <i>Chinese Brush Painting</i>  | Evans, Jane                     | Lessons in sumi brush painting.   |
| <i>Sumi-e Just for You</i>   | Hirayama, Hakuho                | Lessons in sumi brush painting.   |
| <i>Oriental Painting Course</i>  | Wang, Jia Nan                   | Lessons on various forms and good commentary on the effects in the illustrations.   |
| <i>Painted Ceramics; Colour and Imagery on Clay</i>  | Pegrun, Brenda                  | Contemporary decorated work in a variety of techniques, including tin-glaze.  |
| <i>Tableware in Clay from Studio and Workshop</i>  | Wood, Karen Ann                 | Historic and contemporary tableware includes many decorated works.  |
| <b>Ceramic process, materials</b>  |                                 |   |
| <i>Ceramics Spectrum</i>   | Hopper, Robin                   | Excellent book on glazes and color development.   |
| <i>Functional Pottery</i>  | Hopper, Robin                   | Reference for thrown functional forms, incl. historic information, proportion, and design.  |
| <b>Design</b>  |                                 |   |
| <i>Design Basics 4<sup>th</sup> Ed.</i>  | Lauer, David, Pentak, Stephen   | Good basic design text, strong mix of 2-d and 3-d examples.   |
| <i>Pedagogical Sketchbook</i>  | Klee, Paul.                     | Charming design book with personal diagrams.  |
| <i>Principles of Form and Design</i>   | Wong, Wucius                    | 2-d and 3-d design info in digest form.   |
| <b>General technical and trouble-shooting information</b>                                  |                                 |   |
| <i>Ceramic Faults and Their Remedies</i>   | Frazer, Harry.                  | Review of diverse ceramic problems and solutions.   |
| <i>The Potters Dictionary of Materials and Techniques</i>                                  | Hamer, Frank.                   | The best all-around reference book for materials and process.   |
| <b>Low-fire</b>  |                                 |   |
| <i>The Book of Low-fire Ceramics</i>   | Brody, Harvey.                  | Information of clays, bodies, firing, plaster and slip casting, low-fire glaze materials, underglazes, overglazes, decals, airbrush.      |
| <i>Contemporary Pottery Decoration</i>   | Gibson, John.                   | pp.50-55 on Daphne Carnegie's studio practices in majolica.   |
| <i>Low-fire Ceramics</i>   | Wechsler, Susan.                | Out of Print. Section on majolica.  |
| <i>Low Fire: Other Ways to Work in Clay</i>  | Nigrosh, Leon.                  | Chapter on majolica pp 72-75.   |
| <i>Lustre Pottery-technique, Tradition &amp; Innovation in Islam and the Western World</i> | Caiger-Smith, Alan.             | Information about historic and contemporary majolica and techniques.  |
| Studio Potter magazine v.11, no. 2   | See Studio Potter listing above | Earthenware issue, includes Stan Andersen majolica article.   |
| <i>Surface Decoration for Low-Fire Ceramics</i>  | Peters, Lynn                    | Slips, terra sig, underglazes, glazes, majolica, overglaze enamels, decals  |
| <b>Majolica</b>  |                                 |   |
| <i>The New Maiolica; Contemporary approaches to Color and Technique in Tin Glaze</i>       | Ostermann, Matthias.            | International majolica technique survey by a noted Canadian majolica artist.  |

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| <i>Studio Potter magazine</i> V. 24 no. 2 June, '96                                  | See Studio Potter listing above.    | Has a majolica feature with articles by a number of majolica artists.  |
| <i>Studio Potter magazine</i> vol. 35, no. 1, 2006                                   | See Studio Potter listing above.    | Issue on color.  |
| <i>Tin-glazed Earthenware: from Maiolica, Faience, and Delftware to Contemporary</i> | Daphne Carnegy.                     | History and contemporary practice of majolica.   |
| <i>Tin-glazed Pottery in Europe and the Islamic World</i>                            | Caiger-Smith, Alan.                 | A classic with historic and technical information.   |
| <b>Pattern</b>   |                                     |  |
| <i>Repeat Patterns; a Manual for Designers, Artists, and Architects</i>              | Phillips, Peter and Bunce, Gillian. | How to design various kinds of repeat pattern. Enlightening illustrations of the applications of 2-d pattern design. |
| <i>Symmetries of Culture; Theory and Practice of Plane Pattern Analysis</i>          | Washburn, Dorothy and Crowe, Donald | Survey of pattern. Many examples of variations of geometric pattern, often from primitive cultures.                  |