# Traditional Marbling Demos:

## Materials Needed:

- Marbling Kit: read all instructions thoroughly before starting, and be sure to check out all the additional resources available at www.JacquardProducts.com (videos, FAQs, galleries, projects, etc.)
- Paper towels
- Rubber gloves
- Plastic sheeting for carrageenan drips
- Drying racks or clotheslines for drying
- A fan to circulate the air helps the paper dry and a hairdryer can help those anxious to dry their paper before they leave
- Gallon container for mixing carrageenan
- Plastic or metal tray to marble in (at least 1" larger than the paper on each side)
- Tray to carry wet paper
- Mordanted paper, 30-50 sheets (see below)
- Short 5-6" wooden skewers
- Old/cheap toothbrushes
- Various combs and rakes (these can be bought or built)

## Trivia:

- The origin of marbling is hotly contested. Japanese style marbling ("suminagashi") and Turkish style marbling ("ebru") seem to have originated around the same time. There is a rich tradition of paper marbling for book arts in the UK, but the oldest examples of marbled manuscripts likely originate in Persia.
- For hundreds of years, the secrets of marbling arts were closely guarded and known only to certain guilds of initiated artisans. During that era a plethora of specific marbled papers were developed and named. These are the same patterns and techniques professional marblers are still rehearsing today.
- You may have seen old books with marbled patterns printed on the fore edge. This is a beautiful effect, but it also served a function: it makes it easy to tell if a page has been torn out of a book or ledger!
- Novices often wonder how/why using alum as a mordant works to improve the adhesion of the marbled paint to the surface of the fabric/paper. One of the easiest ways to think of it is like this: alum is a large molecule with a net ionic charge that is positive, whereas pigments tend to have net ionic charges that are negative. The alum transfers its charge to the paper or fabric fiber, and the pigment is attracted to the alum. In other words, the two have an affinity for each other like opposite poles of two magnets!

## Traditional Marbling Demos (cont'd):

### Process:

There are several ways to perform this demo. You can marble scarves, hats, T-shirts, pocket squares, ties, raw fabric, canvas, shoes… but the easiest thing to marble is paper, and it also requires the least prep and space. So, paper is often the best choice for a demo or workshop. The Jacquard Marbling Kit provides enough materials to marble between 35 and 50, 11"x14"/27.94 x 35.56 cm pieces of paper, depending on how much paint you use on each sheet. Once everything is set up, you should be able to marble continuously for about three hours, using one kit. The main thing to keep in mind is that your marbling tray should be about the same size as the object you are marbling (actually, just a little bigger). A good tray size is 11"x14"/27.94 x 35.56 cm for a few reasons: it is a large and impressive sheet, the paper is not yet expensive in that size, and it is easy to handle.

Choosing the right type of paper is important, especially because many of today's papers are geared towards watercolor or markers and tend to have a lot of sizing in them. As counterintuitive as it may sound, for marbling you want a paper that ink would bleed on. You are looking for an absorbent surface rather than a slick one. It the surface is too slick, the transferred paint will "float" and spread on the surface, causing the print to run. A more porous surface, on the other hand, absorbs and captures the finest detail of the design. Blotter paper is perfect, for example—it is so absorbent, it does not even need to be treated with alum (which helps improve adhesion during the initial transfer of paint). Claybord™ can be marbled similarly to Duralar. Just keep hands off the marbled surface until it dries completely!

Other good papers are printmaking papers and drawing/charcoal type papers. Rives BFK is great, but it is expensive. Rice papers in general tend to perform well. Mulberry specifically works well, but it is not a very smooth/uniform surface. Hosho doesn't hold up to the moisture involved. Clearprint Vellum is nice if you want a semi-transparent paper to marble on. Graphix's Frosted Duralar turns out to be a nice surface to marble, too, and does not need to be treated with alum. The paint sticks very nicely to the surface and holds good detail, but it is more easily smeared than paper if it is touched before the paint fully dries.

An all-around good choice for paper is Strathmore 11"x14"/29.74 x 35.56 cm 300 series printmaking paper. It has minimal curl when it gets wet, it takes alum well, and it is relatively inexpensive (between $10-12 for 30 sheets). That is plenty of paper for a demo or workshop with 10-15 people and a single marbling kit.

Prep for a marbling demo is the hardest part, especially if you do it all in one shot. You need space to hang 30 or more sheets of paper, long enough for them to fully dry after being soaked or coated in the alum solution. If you do a few sheets at a time, that can be more manageable, but alum-treated paper loses potency after a few days if exposed to air, so it is best to keep them in an airtight bag once dry.

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Making the carrageenan early is very important. You can make it a couple of hours before use, especially if you have a blender, but it is be best if you make it 12-24 hours beforehand. This is because the carrageenan doesn't fully hydrate and reach peak viscosity until then. In a pinch, if you know you need the carrageenan to be ready sooner than later, use extra powder (or a little less water). Carrageenan will keep for at least 3 days, even in hot weather. It is good for a week and a half in 65-72°F/18-22°C. As it spoils it will start to smell bad and thin out. This is because bacteria start to eat the gum, and release sulfur compounds as they process it. If refrigerated in a closed container, the carrageenan solution can be kept for months. If you are unable to refrigerate the carrageenan for some reason, it is a good idea to cover it with plastic when not in use.

Dirty carrageenan can still be used for marbling. Over time, paint will sink into the carrageenan and muddy it. This does not affect the prints because only the thin layer of paint on the surface is transferred to the paper or fabric. Any paint that has sunk below the surface will not print.

If you need a long-lasting surface on which to marble, that will not spoil, you are better off using methocellulose (methocel). Methocel is a semi-synthetic product that bacteria can't eat. It doesn't spoil, and it is still very good for marbling. It does not give you the same detailed lines that carrageenan does for paper, but that is not necessary on large garments or yardage. That is why if you plan on doing large scale fabric marbling, it might be better to choose methocel. You can store it for long periods of time and reuse it until it becomes so dirty with paint you throw it out. Workshops on consecutive weekends would be a situation where this might make sense.

Making rakes and combs for marbling by attaching pins or skewers to a ruler or piece of cardboard is worthwhile because you can make them with the spacing that you want and need. Your comb should only be an inch shorter than your tray, so that when you drag it, it covers most of the design area. We recommend making at least two combs with 1/8" spacing between pins that are 1" shorter than each side of the tray. (For example, if the tray is 12"x18"/30.48 x 45.72 cm to accommodate 11"x17"/27.94 x 43.18 cm inch paper, make an 11"/27.94 cm comb and a 17"/43.18 cm comb).

We find that the sharper the pin on the comb the better, so get some straight pins and tape them with scotch tape evenly and straight across a wooden ruler or strip of cardboard or any kind of flat surface that will be rigid. Then, hot glue them in place and use a second piece of cardboard to sandwich the pins or needles in between with more hot glue. It holds up well.

If you are marbling on fabric, it is hard to do by yourself. If you want to marble a scarf, it is best to hold it at both ends with a buddy. The easiest way seems to be to have one person lay their end down slowly while the other holds their end high, and then the high end comes down slowly and evenly as possible. Let the carrageenan or methocel drip off the scarf, rotate the fabric so the design is on the top, and place the scarf on a surface that is easily carried (like cardboard). Bring the scarf to an area where it can hang dry. Some people like to rinse at this point. There are positives and negatives. You can rinse away

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stray marks, but you can also rinse away some of your color in this way. You are less likely to lose color if you rinse after the fabric is completely dry.

### DIY Marbling Tools:

Marbling tools are not mass marketed. You can make them yourself easily. Trays are the easiest for marbling paper, and any Tupperware style tray will work. Shallow baking trays are good for smaller papers. It is also possible to make your own tray with plexiglass cut from the hardware store. You can glue the plexiglass together with Jacquard Lumiere 3D paint. It is a super strong adhesive as well as a glue, and the clear goes on cloudy but dries clear. This is a good way to make a tray that can be lit underneath by a lightbox or other light source. Demoing marbling that is lit from underneath is attractive to the audience. When you need a large tray for a demo or workshop that can be a trickier task, but there is a simple solution. You can use 1.5"/3.81 cm or 2"/5.08 cm PVC pipe to make your own tray. Get lengths of PVC cut to 2"/5.08 cm longer than the width and height of the material you want to marble. Connect the 4 lengths of pipe with elbow PVC joints. Then, tape plastic sheeting (3mil or thicker) on the inside of the rectangle or square to hold your carrageenan or methocel. This works well! It is easier to drain than a hard tray, because you can untape a corner and put a bucket under the tray or poke a hole through the plastic instead of tipping a precarious tray.

Combs, rakes, and styluses are the tools a marbler uses to make designs in the paint. A stylus can be practically anything. Bamboo skewers are nice, ready-made and cheap. You can also use the handle end of paintbrush or a ball point pen in a pinch. Combs are just like hair combs, but the spacing is usually wider for marbling. You can get useful ones from a beauty supply, but these are usually very fine for marbling. It is straightforward if slightly tedious to make a comb. Toothpicks, pins or needles can be used for the teeth of the comb. It is good to place them evenly spaced along a piece of carboard, ruler or another firm flat surface. I like to use coroplast corrugated plastic because it is waterproof and durable yet still very easy to cut into any length I want. It is nice to have different sizes to fit different trays. For small trays I try to have one that fits both the long and short side of the tray. I tape the pins or toothpicks down to hold them in place and then go back with hot glue or Lumiere 3D to firmly affix them in place. A ¼"/0.64 cm of spacing is about right for a traditional non-pareil pattern, but you can make the spacing almost anything you want. With spacing under 1/16"/0.16 cm you seem to lose detail. A Bouquet comb is a special comb for making specific patterns like the thistle, frog foot, and bouquet patterns. It is a comb with 2 rows of teeth. The 2 sets of teeth are set about ¾"-1"/1.91–2.54 cm apart and are offset where each tine is directly in-between the tines in the other row. These are set wider than a normal comb—usually about ½"- ¾"/1.27-1.91 cm apart.

Rakes are essentially very wide combs. They are used to make the gel git pattern (similar to a chevron) very evenly and quickly on a large tray, rather than going back and forth repeatedly with a stylus. These can also be used to make patterns like the snail or French curl very evenly, as if a machine did it. Rakes are made in many sizes depending on how wide you wish your gel git to be. Some common sizes are 1"/2.54 cm, 2"/5.08 cm and 3"/7.62 cm. Rake sizes are usually on the smaller side for a paper tray and

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larger for doing fabric yardage. The bigger the tray, the more necessary a rake becomes. In a small tray it is easy to perform most of the functions of a rake with a stylus; however, as the tray become larger, it takes much longer to use a stylus, because your "canvas" has been greatly expanded. Reaching your arm across a large tray leads to more errors.

### Marbling Unusual Surfaces:

Jacquard Marbling Color paint is versatile and will stick to most porous surfaces. Surfaces generally need alum, but some very porous surfaces don't need it. You would think the less absorbent the material, the more alum you need; however, that is not completely accurate. Alum can help the paint stick better, but it can also act like dust on the wall, preventing your paint from sticking. You want the alum "in" the surface, not "on" the surface, which is why it is important not to use too much. Ideally, while the alum is chemically attracting the paint and keeping it from smearing, the paint is actually curing to the surface you are trying to marble. For that reason, if there are adhesion issues, adjusting the amount of alum is always the first step. Jacquard suggests 2 tsp/10 g alum per 1 qt/0.95 L of water for paper and 2 tsp/10 g alum per 1 gal/3.79 L of water for fabric. For polyester, you can get away with even less because the paint is not absorbed into the fabric as much, and so neither is the alum. I use half that amount with Polyester. For leather, you can go even lower--around ½ tsp/2.5 g alum per 1 gal/3.79 L of water.

It is possible to marble 3D objects, including hats, shoes, wood, ornaments, and more. Just keep in mind that the deeper you dip, the less paint is available in that area of the tray. That means if you dip something just straight down, the paint will be lighter in the area that goes in last. The way to avoid this is to slowly, continuously move in one horizontal direction while you are dipping the object under the marbling surface vertically. It is best to completely submerge the 3D object to get an even marble, so you need a deeper tray or a bucket.

<u>Marbling Demo Potential Add-On Sales:</u>

Paper
Masking Fluid
Silk scarves
Airbrush Colors
Textile Colors
Applicator bottles / eye droppers
Mouth Atomizer
Alum
Methocel
Carrageenan
Grafix Frosted Duralar
Claybord™
Wooden panels