

Teaching Glass Art

A comprehensive guide to teaching glass art

Planning – Preparing – Performing



Dennis Brady
Glass Campus Publishing

Teaching Glass Art

A complete guide
to planning, preparing and producing glass art instruction

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www.glasscampus.com



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There are many people to be thanked for helping me over the years and leading me to where I could write this book.

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Last, and really most important, would be all the people over the past many years that took my classes and bought my books and DVDs and participated in online webinars. I learned the most from them.

Thanks to all.

A handwritten signature in black ink, appearing to read "Dennis Brady". The signature is fluid and cursive, with a large, circular initial 'D'.

Introduction

Learning how to teach glass art was a trial and error experience for me with lots of errors. When I decided to write this book, I thought I would try to write the book I wish I could have found before I started teaching. I know what I know now would have helped me a lot then. I hope it helps you. If you're still just thinking about teaching but haven't tried yet, I hope it convinces you to try. If you have been teaching and want to become a better teacher, I hope it helps you do that.

I hope you will treat teaching as a learning experience for you as well as for all those you teach and equally hope you will work constantly at improving your own personal skills and knowledge – both in the work you do and in how you teach.

If you like teaching and you're enthusiastic about teaching, your students will know it. If you do not like teaching but you only offer classes to generate sales, your students will also know that. If generating sales is your only reason to offer classes, maybe you should either learn to like teaching or hire someone that does like teaching to run your classes for you.

Don't be afraid to try and don't let fear of failure keep you from trying. Nobody is terrific at their first try. Teaching is the same as everything else – the more practice you put in, the better you get at doing it. When are you ready to teach? When people ask you to or when you think it's something you'd like to try. If you're a little nervous about putting on a class, do a trial one with just friends and family and ask for their comments and advice. Practice with them. Play detection/correction with them. Ask them where they think you did well and where they think you could have done something different or better. Encourage yourself the way you would encourage your students.

Dennis Brady

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GLOSSARY

Chapter 1 - Attitude

How well you do something usually depends on how much you like doing it.

Why do you want to teach?

As much as any skill you have, your personal attitude will decide how well you do something. If you plan to teach, it's a good idea to start by asking yourself some serious questions about why you want to teach.

- Do you think you have something to offer and want to share?
- Do you think teaching will help generate new customers?
- Do you expect teaching to provide extra income?
- Do you like teaching or do it just for money?
- Are you willing to freely share all your knowledge?
- Do you expect to keep trade secrets and not teach them?
- Will you teach alternatives or just your own favourite methods?

How well your students respond to you and how well they learn from you, will depend a lot on your attitude to teaching. When you like to do something, your students will know it and respond to you. If you dislike teaching, your students will know it.

Aptitude

Teaching is an acquired skill. Some people have a talent for teaching but talent won't make you a good teacher. It just makes it easier to acquire the needed skills. If you don't have the skills, are you willing to work to try to get those skills?

Is teaching something you truly like doing or are you just offering classes to generate business?

Chapter 1 - Attitude

Ethical Teacher's Guide

Many years ago I got together with a group of artists and teachers to discuss teaching methods and teaching attitudes. From that brainstorming session we created a proposed Ethical Teacher" Guide.

- **Teach first – sell second.** You should be there to teach, not to sell products.
- **Teach all alternatives.** Don't teach only your personal favourites.
- **Teach everything you know.** Hold nothing back. There should be no "trade secrets"
- **Be honest.** If don't know something, or can't answer a question, admit it.
- **Be prepared.** Plan your class to run efficiently and effectively.
- **Listen actively.** Identify each student's needs and try to meet them.
- **Be fair to all.** Treat all students equally. Have no favourites.
- **Create participation.** Get everyone involved – especially the shy and hesitant students.
- **Clearly define objective.** Take care to be sure everyone understands what it is they're trying to do.
- **Instructor supply everything.** Students should not be expected to buy tools for the class.

Become an expert

You should be prepared to answer questions. Your students expect you to be an expert on what you teach. Part of your class planning should be to anticipate questions you might be asked. If you are not enough of an expert to answer anticipated student questions, will you make the effort to become one? If you don't want to do that, maybe you should hire someone that is an expert to teach for you.

Chapter 1 - Attitude

Questions Create Progress

Discussions on art techniques are a lot like debates on faith vs science. There are some that think unquestioning faith in established methods should be placed in the instructions like commandments set by others before them - while others are willing to believe only what they see and personally experience. We learn by starting with what knowledge others have acquired before us and are willing to pass on, but if we go no further than that, we stagnate. Progress and growth comes from questioning what was done before. Just because something has always been done in a particular way, is no reason to assume that's the best way to do it. At one time, it was almost universally believed that the sun revolved around the earth and that the earth was a flat disk. Fortunately, we had a few individuals unwilling to place blind faith in what they were told to believe. If none of us had been prepared to question the instructions of how something should be done, and none of us had been prepared to experiment with new ideas and methods, all of us would still be living in caves, hunting game with stones and sticks and cooking dinner by praying for lightning to strike.

“True Art is ever progressive and impatient of fixed rules. Because a thing has always been done in a certain way is no reason why it should never be done in any other way”.

.....Louis Comfort Tiffany

“Sometimes the best way to do something, is the way you haven't tried yet”.

..... Dennis Brady

“Traditionalism is the enemy of innovation”.

..... Dennis Brady

How you feel personally about traditionalism vs creative innovation will strongly affect how you teach. Producing art is a creative experience. Are you uncomfortable with teaching something that is likely to be constantly changing and evolving?

Chapter 1 - Attitude

Practice Patience

We've all heard the saying, "Patience is a virtue". It can also be an acquired skill you can work at improving. Patience is a skill a good teacher works at perfecting and polishing. Some individuals are more patient than others but nobody has unlimited patience. Everyone has a limit and everyone has things that challenge their patience. A patient teacher is a better teacher. What can you do to be more patient?

1. Recognize your triggers.

What irritates you? What tests your patience? Some common triggers might be:

- The same questions being repeated.
- Students coming unprepared.
- Students not paying attention.

2. Understand your triggers.

Accept there are things that make you impatient. Are you more likely to become impatient with yourself, with the behaviour of others or with things not working the way you expect they should?

3. Manage your triggers.

If you anticipate the triggers, you can control and manage them. Is patience a form of tolerance? Do you think there should be a limit to your tolerance and to your patience? Will becoming more tolerant make you more patient? Is improving patience a form of anger management?

4. Avoid your triggers.

Advance planning to anticipate what might trigger your impatience can help you avoid those triggers. Planning ahead how to deal with them will prepare you to deal with them when they happen.

By increasing your own patience level you will be better able to teach patience to your students.

Chapter 2 - Organization

Organizational planning is the difference between controlling what happens and allowing it to happen without control.

Advertising

If you don't advertise, how will people know about your classes? Tell the world what you have to offer. Some ways to promote your classes:

- **In shop posters or post cards.** Many places can provide high quality posters of various sizes and post cards or flyers at affordable prices. Hang some posters in your shop and hand out cards to customers.
- **Internet social media** – spread the word. The more places you post comments, the more people will know you offer classes. Be prolific.
- **Email Newsletter.** Create a list of email addresses of prospective students and send them a newsletter. Work at constantly expanding your list and use it to keep customers and students informed of what you're doing and anything new you have to offer.
- **Mail outs.** If you have mailing addresses of prospective students, send them something – even if it's just a card or note telling them you offer classes. Snail mail works – often better than email. Perhaps because we now get so much email and so little physical mail we pay more attention to paper mail? Emails are easy to delete. Physical mail is also easy to toss out but is a lot more likely to be looked at before being sent to the trash. A while back I put together a presentation package about class offerings for school groups. About 25% of the schools I sent one to responded. Many now regularly bring groups to our shop for classes. Groups as many as 40 and ages spread from grade 1 to grade 12. From these school groups, we also picked up groups from Boy Schools and Girls Guides and LOTS of birthday parties. The kids love doing glass art as a birthday party and many ask their parents to do it for their next party. Another prospect is local businesses looking for fresh ideas for team building events. We do a lot of these with many of the businesses passing along recommendations to other businesses.
- **Bulletin boards** – put up a small poster or pamphlet at community bulletin boards. Most community centres have places for that.
- **Newspaper or magazine ads.** These work but can be expensive. Explore the many options for free internet advertising on places like Craig's List.

Chapter 2 - Organization

Class Description

It's especially important to provide an accurate outline of what your class covers – and often equally important to point out what it does not include. Take special care to be sure there is no confusion or misunderstandings as to what is and what is not offered. I've done classes where students were unhappy because they expected the class to cover something it doesn't or it was at a level they weren't ready for. When you draft your Class Description take special care to clearly state what skill level the class is at and what previous skill level is expected from anyone participating. It should also list any tools or supplies each student is expected to bring with them.

Chapter 10 includes some sample Class Descriptions

Liability Release

You have both a moral and a legal responsibility to create a safe environment for your students. Take every precaution you can, but even with the greatest efforts to avoid accidents, sometimes accidents happen. You should protect yourself by giving each student a handout listing possible hazards and recommended safety precautions. Some instructors will also have each student sign a Liability Release absolving the instructor of any liability for any accident or mishap during the class. If you teach at a school or community center, they almost always insist on a release from each student.

Chapter 10 includes a sample Liability Release

Liability Insurance

Whether you teach at your own studio or as a guest instructor elsewhere, it's a good idea to have liability insurance in case a student has an accident and decides to sue you. Remember what I said about safety. The best insurance is to start your class with safety warnings and to provide each student with a handout explaining the safety issues. Liability insurance can be expensive and varies greatly between different insurance companies. Shop around. Some household insurance will allow you to add liability insurance for classes you teach but not always. Don't assume without checking.

Chapter 2 - Organization

Cancellation Policy

Decide in advance what your cancellation policy is. Be sure it is clearly explained and states what advance notice is required to receive any refund for the class fee. That's especially important if your proposed class can only take a set maximum number. Your policy should be fair. Fair both to the student and to you. You don't want to have someone cancel at the last moment and leave you with an empty spot and not enough advance time to fill that space. It's not uncommon for instructors to require 7 to 10 days advance notice for full refund or sometimes even to allow refund only if a replacement can be found for the vacant spot.

Copyright Issues

You don't want people copying your work so you shouldn't be copying someone else's work. This is VERY important when you make work for sale but is much less of an issue when you copy work for teaching purposes. Some copyright factors for you to consider:

1. **Originality.** The originator of a design owns the exclusive right to the design, but only if that design is original enough to be protected by copyright.
2. **Derivative copy.** Some people claim if you change a copyrighted design by some percentage, it makes it okay to copy it. Nonsense. There is no percentage the law considers an acceptable variance if the copy was derived from a copyrighted design.
3. **Techniques and ideas.** Techniques and ideas are NOT protected by copyright and can be copied by anybody that wants to copy them.
4. **Fair use.** Fair use is a doctrine in the law of most countries that permits limited use of copyrighted material without having to first acquire permission from the copyright holder. In many cases, you can use copyrighted materials for purposes such as criticism, comment, news reporting, and teaching (including multiple copies for classroom use), scholarship or research.

Photo release

You should build a collection of photos of your projects and of your student projects and might also want to take photos of students to use for advertising to promote your classes. If you want to publish photos of people, especially children, you need a release authorizing you to do that. Some instructors include a photo release agreement in the liability release form. Google can provide you with examples of a photo release form.

Chapter 2 - Organization

Class Fees

How much should you charge for your classes? What is fair? There is no formula. Every instructor prices their classes differently. You want to be paid for your time and want to be compensated for the use of your tools and any materials you provide but sometimes there are other considerations.

Instructors with name recognition can command higher fees than those nobody knows. If you're new at offering classes, you probably have to start with low class fees to be sure you attract enough students to fill classes. As you gain experience and support, you can increase your fees – but it's always wise to start low.

If you expect classes to help create new customers for products you have to sell, you may be willing to offer them at a low rate. Maybe even below your actual cost? A good place to start is by looking around the internet to learn what other instructors offer. Community centres usually use a guideline of from \$10 or \$15 per class hour per student. A full 8 hour class might thus charge from \$80 to \$120 per student and either charge extra for any materials provided or set a per student fee for materials used in the class.

Instructor Fees

Like class fees, there is no fixed formula. If you're charging someone to teach for them or if you're hiring someone to teach classes for you, what is fair? Some instructors have a set fee. Sometimes they charge an hourly rate and sometimes a fixed per day rate. Colleges and trade school pay guest instructors the same per hour rate as their regular teachers. Community centres often pay little more than the local minimum wage.

Some visiting instructors include their expenses in their daily fee and some want to bill expenses separately. As with all things, everything is negotiable. I think a fixed fee with the instructor taking care of their own expenses is best. That removes any concerns about what and how much the instructor bills as expenses and eliminates the possibility of any bad feelings that might come up if there is any suspicion the instructor is padding the expense bill.

When I teach as a guest instructor, my fees vary depending on where I teach. If a fixed fee is preferred, I calculate my estimated total expenses and total time, including travel time, and quote a fixed rate based on expenses plus \$400 per day for my time. I charge full rate for studios running classes for profit and discount from that for non-profit studios - sometimes donate my time and charge only expenses. You decide what you think is fair.

Chapter 2 - Organization

Age/Skill Level

How you plan your class will be different for different age levels as well as different skill levels. A class for 6 year old school kids would be planned and prepared a lot different than for 16 year old teenagers and even more different than for 60 year old seniors. If you want to offer a class that's open to all skill levels, you need to plan it a lot differently than one for just children or for just adults.

The same for students of different skill levels. You wouldn't want to plan a class in advanced techniques that includes beginners with no experience at all.

Are Tools Included?

Will you provide all the tools needed for the class or do you expect each student to supply their own? Some glass retailers that give classes ask each student to buy a set of tools for the glass. Community centers often give each students a list of tools to bring to the class.

My personal and professional opinion is all tools needed should be provided by the instructor or by the studio offering the class. When students are asked to buy tools before a class, they don't know what to buy so most often buy whatever is cheapest. That is doubly unfair to the students. Any student that decides after the class they don't want to continue, will have no use for the tools they bought and want to dispose of them. Those that do decide to continue will soon learn those cheap tools have limited value, if any, and will want to replace them with better tools. If the instructor or the studio provides all the tools, the students have a chance to work with better quality tools and even have a chance to experiment with a variety of different tools before committing to buying anything.

Take some time to consider all the tools you might want to have available to use or demonstrate. Try to imagine all the contingencies. If you ask students to bring their own tools, it's wise to have a few spares in the event some forgot to bring theirs.

Are Materials Included?

Will you supply all the materials needed for the class or will you ask each student to supply their own? I prefer to supply everything. That way I don't have to worry about whether someone brought the wrong materials or forgot to bring any. Just as with tools, try to predict all the contingencies. Always have extra.

Chapter 2 - Organization

Projects or Lessons?

Plan in advance whether your class will focus on making projects or instead will focus on providing instructions. You can concentrate on just one or have a mix of each but if you fail to plan in advance and structure your lessons accordingly you can easily lose control and end up with chaos. If you are the teacher, you are the commander. You are in charge and you are responsible for keeping the class on track and on schedule.

Class Size

How many students do you think you can manage without assistance? Decide in advance and hold firm to your decision. . A large class will provide more income but will also be more work. If you take on a class with so many students you can't give each one the attention they need and paid for it isn't fair to the students.

General or specific

Will your class provide a general outline of a subject or will it focus on some specific element? For example, if you're teaching kilnforming, do you plan to cover fusing and slumping in general or focus on some specific techniques? If you're teaching sandblasting, do you plan an overview of different techniques or just teach a specific sandblasting technique. An axiom I like and always keep in mind is,

You can do one thing well or several things poorly.

Age limits

The question of how young a student will you accept always comes up. There's no reason you can't have young people in a class (I've done classes with kids as young as 6) but it can be a problem if you have children in a class with adults. When you explain or demonstrate something intended for adults, too often children don't understand your explanations. You make certain assumptions as to what adults already know or you use comparison references adults understand that children don't. If you have too extreme an age mix in a class, it can be unfair to every one of every age. My usual practice for adult classes is to refuse to allow anyone younger than 12.

Chapter 2 - Organization

Skill level

What skill level do you expect students to have?

Beginner ? Intermediate? Advanced? Expert?

Just as you should avoid having too much age difference in a class, even more important is to avoid having too great a skill difference. If you're doing a class teaching an advanced technique that requires students already have basic skills and experience, you don't want to have beginners that expect you to explain the basics for them. Plan your class for the skill level you expect each student to have – and take great care to state that in your class description.

Demos – Live or Video

If you plan to demonstrate a process or technique, live demos are always best but not always practical. You might not have the space or the needed equipment in the classroom or might not have the time to demonstrate the full process. That's where videos are often better and provide important advantages.

- Everyone gets a good view of the demonstration rather than just the people sitting near the instructor.
- You can use extreme close up views to provide a better demonstration of key elements of your demonstration.
- Slow motion video often gives the student a better understanding of what is happening. A slow motion video of tempered glass exploding when it breaks is a good example of that.
- Editing will allow you to demonstrate the full process in a few minutes of something that might take hours or even days to complete.

It's great if you have a projector and large screen but if you don't have them, a laptop computer connected to a monitor works well. I use videos to teach in my home studio and when teaching as a guest instructor. If they don't have a projector and screen, I take my laptop and the biggest monitor I can transport.

Chapter 3 - Preparation

Preparation produces positive performance.

People that have never taught classes usually don't understand how it can often take much more time to prepare for the class than it does to teach the class. Those that have taught classes understand perfectly that the more time spent preparing, the more efficiently the class runs and the more effective the teacher is.

I learn a lot from teaching. Probably learned the most from teaching children. I especially learned to expect the unexpected and never assume I'm as prepared as I should be. Maybe the most important thing to be prepared for is to be prepared for the time something comes up you were not prepared for.

Classroom setup

Put serious thought into where you teach. Is it a suitable space for what you want to teach?

- **Lighting.** Does it have adequate lighting? Are there dark or shadowed areas?
- **Ventilation.** Are there any special concerns with ventilation? Will your class be producing dust or fumes that need to be ventilated?
- **Water supply.** Will you need wash up facilities and water supply?
- **Noise.** Are there noise concerns? Are there outside noises that can interfere with your class? Will your class be creating a lot of noise that might disturb others?
- **Privacy.** Could there be outside distractions to interfere with your class?

Class Outline

It's easy to get sidetracked in a class and miss something. Maybe even something important. For many things it's important they be demonstrated or explained in a particular order. Mixing them up can be confusing for your students. Preparing a Class Outline for you to refer to during the class will help you stay on track and check to be sure you didn't skip something. I use one for all my classes and usually tick off each item as it's covered.

Chapter 10 includes some sample Class Outlines

Chapter 3 - Preparation

Safety

Safety first. Always. I start every class discussing safety.

Take care to be sure you provide a safe place to learn and do what you can to minimize the possibility of any accidents or mishaps.

Plan in advance what you will do in the event some accident happens. Do you have a first aid kit? Lots of band-aides? Burn ointment? Where to call for help? The old axiom still applies – **Hope for the best but plan for the worst.** Imagine what might happen and have a plan in place for what to do if it happens.

Issue warnings. Take the time to warn your students about potentials hazards and explain how best to avoid injury.

Have a **comprehensive safety handout** to give each student. This isn't just for the student. It's also for you. Such a handout will provide you more liability protection than a liability release by eliminating the possibility someone has an accident and claims after they were not warned about safety issues.

Sample Safety handouts are included in the Sample chapter.

Debunk myths. For example, there are many myths about lead poisoning – mostly fear mongering bunk being spread by companies wanting to sell lead free products. Explain how you can only get lead poisoning by eating it. The same applies to many irrational irresponsible comments about some dust hazards. Many people insist kiln wash and silicon carbide dust are a serious health risk. Not so. They are nuisance dusts – no more serious than drywall dust. It's important to debunk myths to ensure credibility so when people are warned about things that ARE serious (like glass dust) they take the warnings seriously.

Don't terrify them. You want to warn them of the need to take precautions but not scare them into being too afraid to participate. I like to use humor to ease tension. I show them how to handle glass to avoid cutting themselves but warn them that glass is sharp and if you keep working with it, you will inevitably cut yourself. Not to worry. Cuts are sharp and heal quickly. I tell them my best advice is

If you work with glass you will inevitably cut yourself but don't worry about it. Glass cuts are so sharp, most of the time you'll see the blood somewhere before you realize you've cut yourself.

If the sight of blood disturbs you, take up pottery.

Chapter 3 - Preparation

Tools Needed

Are you providing all the tools or are students expected to bring their own? I personally think it's unfair to expect beginner students to buy tools. I think everything should be provided by the instructor. For intermediate and advanced classes it's reasonable to ask students to bring their own but not so for beginners. Have you made up a list of all the tools you might need? Have you considered all contingencies? That old saying is always appropriate.

It's better to have and not need than to need and not have.

Even if you've asked students to bring their own tools, it's a good idea to have a few extra on hand in case some forgot to bring theirs.

Materials Needed

Same as with tools – it's better to have too much than too little. Prepare a list of what all materials you expect will be needed for the class. Provide some extra to allow for accidents or unanticipated waste.

Student Kit

Getting a class set up can be hectic and time consuming. It helps a lot if you previously put together kits of all the tools and materials each student will need. You can place them at each work station or just out on a table or in a box and tell everyone to pick up a package.

Having everything prepared in advance does more than save you time. It reduces stress. Getting prepared for a class can be very stressful. If you're rushing about before the class getting everything ready, your stress levels rises. That can affect how you teach. It's important you start your class relaxed and comfortable. Your students will sense it. The more work you do before the class, the more relaxed and comfortable you will be teaching the class and the better you will perform as a teacher

Doing this provides a double benefit. It not only saves you time with class set up but also ensures you didn't miss anything. Make up a check list in advance for everything you each student needs and put together the kits from that list.

Chapter 10 includes a sample Student Kit List

Chapter 3 - Preparation

Instructor Kit

Make up your own Instructor Kit the same as you did a Student Kit. Prepare a list to work from and be sure it includes:

- **Tools.** All the tools you will need for demonstrations. Remember to add also those you might need as well as those you are sure you need.
- **Materials.** All the materials you will need. Add extra in case you need them.
- **Patterns.** Any patterns you will need for your class.
- **Samples.** Some examples of the projects you're explaining or demonstrating.
- **Photos.** You often can't provide samples of everything so having photos to pass around can be the next best thing.
- **Videos.** If you plan to show videos in the class, be sure to include in your kit list any DVDs or thumb drives you plan to use.
- **Class Outline.** To act as a class plan for the order in which you present everything and do demonstrations. If you think it's needed, a time schedule might be include.

Chapter 10 includes a sample Instructor Kit List

Handouts

Some students are compulsive note takers. I try to discourage that. In part because it can be distracting to others in the class and more importantly it means the note taker is likely to miss something in the class while they're taking notes. It also ensures if I missed covering anything in the class, I know it's in the handout.

I provide a handout in each student kit. As my class handouts got increasingly larger (sometimes 20 or 30 pages) I switched to providing a DVD as a handout. This allows me to provide over an hour of video materials, dozens of text tutorials, and loads of high quality photos over everything discussed and demonstrated.

Chapter 3 - Preparation

Materials Inventory

I make it a routine practice to maintain an inventory of class components always on hand for classes. They're set out in bins or trays for students to take whatever they want to use.

- **Precut squares** – bins of assorted color squares 1/2 inch, 3/4 inch, and 1 inch.
- **Premade pebbles** – assorted size and assorted color prefused pebbles.
- **Scrap melt stones** – pebbles made from fused bits from a screen melt project.
- **Premade “puddles”** – made from broken bits from fused layers.
- **Vitrigraph bits** – assorted swirls and bulbs from vitrigraph runs.
- **Freeze & Fuse castings** – a variety of castings of flowers, leaves, starfish, spiders, geckos, etc.
- **Sandblasting stencils** – an assortment of 1 inch x 1 inch and 3 inch x 3 inch stencils with precut glass squares to apply the stencils to for sandblasting.
- **Plaster/silica castings** – a collection of castings ready to use for embossing or kiln sculpture projects.
- **Wire rings** – assorted size copper wire rings to use for making suncatchers and windchimes.
- **Glass Corner Cut Offs** – the corner cut off pieces from cutting circles out of glass squares. Assorted corners from cutting out 6 inch, 8 inch and 12 inch circles to use for making glass stands, glass fish and wind chimes.
- **Precut vinyl stencils for sandblasting** – machine cut vinyl stencil ready to stick onto glass to be sandblasted.
- **Precut glass for sandblasting** – various size squares of both art glass and float glass precut and edge sanded for students to use for sandblasting.
- **Precut ceramic fiber paper** – shapes precut from 1/8 inch thick ceramic fiber paper.

Chapter 10 includes photos of some of my collection of assorted components made in advance and set out for classes.

Chapter 3 - Preparation

Provide Examples

Your students will better understand what you're explaining or describing if you have some examples to show them. Photos are great but real samples are better. Especially helpful are examples comparing different results from different processes.

Some of the comparison examples you might prepare in advance for your classes could include:

Stained Glass. Examples of a stained glass projects at different levels of completion.

- Cut out ready for lead or foil.
- With foil or lead applied.
- Soldered complete.

Fusing. Examples of identical projects fired to both tack fuse and full fuse.

Slumping. Examples of how glass will slump differently at different temperatures and at different spans.

Draping. Examples comparing how much faster, and at lower temperature, glass drapes than it slumps.

Mold Release. Comparisons of how different mold releases produce different results.

Sandblasting. Comparison of results of blasting with different size grit.

Casting. Different results from using different glass – especially the difference between casting with frit and casting with larger pieces of glass.

Vitrigraph. Comparisons of results from firing at different temperatures and with different size holes in the pot.

Mold Making . Examples of molds made from different materials.

Coldworking. Examples of projects before and after coldworking.

**Chapter 10 includes photos
of some of the demonstration samples I use in my classes.**

Chapter 3 - Preparation

Mixed Project Classes

It's easiest to have everyone in your class all make the same project or at least doing something using all the same technique but it is also possible to do classes where each student chooses from a variety of different projects and techniques. I do a weeklong Glass Art Anarchy class where everyone does whatever they wish to try and evening Glass Art Playtime classes where each student chooses from 8 different options.

Embossed	12 inch square embossed/sculpted panel.
Float Fun	12 inch square or round float or tempered project.
Fusing	8 inch round or square project for a tray, sconce or vase.
Glass Fossils	8 inch square project for a tray, sconce or vase.
Pebble Play	8 inch square project for a tray, sconce or vase.
Suncatcher Fish	3 suncatcher fish.
Wind Chimes	all the parts to make a wind chime or mobile.
Xmas Ornaments	10 assorted ornaments.

Setting up to do classes with multiple projects allows me to offer a variety of options while also increasing the likelihood I'll attract enough interest to fully fill a class. Some of these classes will have as many as 12 participants. What's the trick to managing such classes?

Planning and preparation. Lots of planning and preparations

Project Plan card. Each student starts by deciding what they plan to make and how they plan to make it.

Tools. Everything they might need for any of the projects is set out in advance.

Materials. All materials and components have been prepared in advance for each to select from.

Student Kits. Wherever possible, student kits are set out with everything needed to complete the chosen project.

Instructor Kits. For each project choice I have a drawer with an instructor kit including demonstration samples and class outlines for me to use.

Printed Instructions. Instructional guides for each of the options have been printed out to answer most of the question students will have.

Videos. A laptop with monitor connected is set out with video tutorials each can play if they wish.

Chapter 4 - Managing

Carefully managing your class will ensure the results you want.

Structure in Segments

If your class includes several or more different stages or different projects, you will find it a lot easier to keep the class moving and be able to control how long each stage or project takes if you divide the class into specific separate segments.

Everyone learns at different speeds and everyone works at different speeds. Some of your students will finish their project well ahead of the others while others drag behind. If you have the entire class wait for the slowest students, you'll have the rest of the class sit idle with nothing to do. That's not fair. You can keep your class moving efficiently by organizing the class into segments with a set time schedule for each demonstration and for each project. I try to plan each class in segments with an expected time for each segment and a time when each segment will complete and the next one start. It helps to keep the class on track if you provide a warning when the time to change to a different subject or project approaches.

For example:

***10 minute warning everyone. Finish what you're doing.
In 10 minutes we're starting something else.***

Schedule Timing

A key part of planning the segments in your class is having a timing schedule for completing each segment. It's common for class times to go a little over the originally scheduled finish time – especially if you have some of your students who have trouble finishing their projects in the time allowed. That can be a big problem for you if you don't have some definite time controls on the schedule. If you fail to set a fixed schedule, it can be abused and become almost impossible for you to keep the class on track. It's reasonable to have a set maximum allowed for a class to be extended. In classes in my home studio, I set that as 20 minutes. When the time comes for the class to complete and some students still haven't completed their projects, I tell them they have 20 minutes and if they haven't finished in that time they will have to leave the project unfinished. When teaching as a guest instructor in other studios I set that as a maximum 15 minutes. You can decide what you think is fair but if you fail to tell everyone in advance there will be scheduled completion, it can be, and often will be badly abused.

Chapter 10 includes a sample Class Time Schedule I use.

Chapter 4 - Managing

Age & Skill Appropriate

Customize your teaching to fit the age, skill and experience of your students. That's especially important when teaching children. Try to use explanations, demonstrations and language appropriate to their age and experience.

If you have a class of beginners, you can't assume they understand all of the basics the way those with some experience would. If you're not sure, it's always a good teaching practice to review the basics when you start your class. With young students, take special care to avoid using references they might not understand.

Control Project Start

If there are any instructions or demonstrations needed, it's always best to do them before your students start working on their projects. Once they start working on projects that's all they want to do. They have no interest in anything else and will be unlikely to pay attention to anything more you say. Take care to finish all your explanations before you let them start working on projects.

Some classes require explanations and project work being done in stages. That's where it's important to carefully schedule time for each stage and give everyone a time warning to complete each stage. For example:

- You explain what is to be done in the first stage.
- Students do the first stage.

STOP

- You explain what is to be done in the 2nd stage.
- Students do the 2nd stage.

STOP

- Repeat as needed for various stages to completion.

Chapter 4 - Managing

Check for Skills

Don't assume your students have the required skills – even if they claim they do. A student with inadequate skills can waste a lot of materials and slow down your class. Once in a class teaching Weaving Glass with an outline that clearly stated “Intermediate level class - must have good cutting skills”. I had a serious problem with materials waste. I had started with almost twice as much material as I expected to need with each student expected to cut out 12 inch long strips of various width glass to assemble the weave base strips for a weaving project. I didn't expect any problems. Big mistake. In a class of 12 students, only 2 were able to consistently score and break straight strips. About 75% of the glass was turned into scraps that couldn't be used for weaving projects. In classes for Weaving Glass I now precut a big collection of strips in different widths and different colors before the class to let students select from.

Cruise your class

Move around the class to check on what each student is doing to see if any need help and further explanation. Offer suggestions where you think they will be helpful. Be liberal with praise and encouragement. It always helps. Use positive comments rather than negative. Instead of saying, “That's wrong” instead say, “Let me show you an easier or better way to do that”. Some students need no help at all while others need a lot. Concentrate on those that need help the most. If you notice one student is doing something especially interesting, point it out to the rest of the class. As much as you can, try to find something positive to say about each project to each student.

Choose Tools & Materials First

Planning for what will be needed is an essential part of planning for everything. Before letting a student jump into a project, take care to consider what all tools and equipment will be needed for the project. If it's a fusing project, select the mold needed before starting. Do you have a kiln for the size of the project? Do you have enough kilns to fire all the projects you expect your class will produce? Do you have enough time to finish kiln firing all the projects? If the project will need coldworking, do you have the equipment needed? If it's a sandblasting project, do you have all the equipment and materials for what the student wants to do? It's always a wise strategy to make a list of all the equipment and materials needed before starting a project.

Chapter 4 - Managing

Materials Control

Take care to control what materials your students have access to. If you have some special glass you wanted to save for your own use, be sure to hide it away. If you have some unusually expensive glass you don't want used (like dichroic) put it away somewhere if won't be found. I once had a beginner student pull out a full 19 inch diameter sheet of dichroic glass worth over \$200 expecting to use it as base to make a large bowl.

I usually let students go into the glass room and pull out whatever they want to work with. I remember one class where one pulled out several sheets of different blue glass commenting about how much she loved the colors. Her friend commented about the prices on the red and orange glass being more than on the blue glass. The blue glass lover put all the blue glass back and pulled out red and orange glass. She liked the blue glass most but choose to use the red and orange only because it cost more than the blue.

It's nice to let students choose their own materials but sometimes better to start each student off with a basic kit of materials.

Project Control

You may want to put firm controls on how many projects each student can do. Some students will take care to do fine work but others just want to crank out as many projects as they can with little or no concern for quality. Just make lots of projects.

I do a Christmas ornaments class that's planned for each student to make 10 projects of assorted ornaments from precut components to which each adds decorative elements. Some students produce some wonderfully elaborate projects with a few having trouble finishing all 10 in the time allowed. In one class I had a student slap together 10 projects in about 30 minutes – then asked if she could do another 10 or more. When I explained the idea of the class was to make something much more decorative than just a few pieces fused together she replied,

"I don't care about decorative. I just want to make 40 or 50 ornaments to take to sell at a Christmas craft fair".

I told her there was another class next week she could take again to make another 10 ornaments if she wanted.

Chapter 4 - Managing

Suggestion Not Decision

Some students have trouble making decisions and want you to make decisions for them. They will ask you, “What should I make?”, “What colors should I use?” “Should I drape it or slump it?” If you start making decisions for your students you will never stop doing it for them and you will have failed to teach them how to make their own decisions. Explain the advantages and disadvantages of different options and let each decide which are most important to them. Most people that have trouble making decisions just have trouble accepting the possibility of failure. Teaching your students to accept the inevitability of some failures is perhaps one of the most important things you can teach.

Student Project Cards

If students have projects left for you to complete (perhaps to be fired in the kiln) it can be complicated keeping track of which project belongs to each student. I’ve printed up Project Cards and tell students to fill out a card for each project and be certain their card stays with their project - either placed on it or under it.

I will then take care to be sure that card stays connected to the project through each stage until it is returned to the owner.

Chapter 10 includes samples of the Project Cards I use in classes for each project for each student.

Kiln Load Charts

You should have some system to help match what’s in the kiln with each owner. You can draw up a map or drawing for how it was loaded. My favourite method is premade grids where I attach the student project card to the card in the same pattern I place the projects in the kiln. That makes it easy for me to be sure the project card gets reunited with the project. Take the project out, put it in a bag and either drop the card into the bag or staple it to the bag.

Chapter 10 includes an example of the Kiln Load Chart I use to keep track of projects as they go in and out of the kiln..

Chapter 4 - Managing

Project Boards

If the student projects are relatively large you'll probably want each student to leave them out at their work station for you to later move to the kiln. If your class involved each student making a lot of small projects, finished projects can quickly fill up all their work space. I've taken sheets of cardboard and drawn grids on them for student projects. Each student is asked to place their projects on a grid square with their card with it – preferably with the card beneath the project so it can't get pushed or blown away.

Chapter 10 includes a photo of a sample project board I use for my classes.

Individual Shelves

You could ask students to each load their projects in the kiln but that could create a lot of extra work for you if they don't allow enough space for other student's projects and can make it especially difficult to keep track of who belongs to each projects. If your class has a lot of small projects (like jewelry) a handy way to deal with it is to give each student their own shelf. It's an extra expense, but it's also a huge time saver. It can be a full kiln shelf, or a piece of kiln shelf cut from a larger shelf (a tile saw comes in handy for doing this) or it can be a piece of unglazed ceramic tile. They're available from pottery suppliers in stock sizes 4 inch x 4 inch, 6 inch x 6 inch, 8 inch x 8 inch and 12 inch x 12 inch.

Doing this also helps control how many projects each student does. They can fill their shelf and no more. You will always have some that are more interested in quantity than quality and want to make as many as they can with little or no concern for quality. Having a designated shelf controls how many they can make. It also makes it a LOT easier for you to load the kiln.

Cleanup help

Cleanup after a class, or preparation before a class, can be a lot of work. You can make your students your helpers. Many want to help. Give each student instructions on what to do with any unused materials or scraps. A printed out work list helps – especially if some of the tools you've put in their kit are meant to be returned to you and not for each student to take home.

There is always some cleanup and packing up for you after each class – but you'll enjoy teaching a lot more if you've been organized enough to keep it to a minimum and if you can get some of your students to help.

Chapter 4 - Managing

Student Handout

To discourage anyone taking notes – and remove any need to take notes – I always have a handout in each student kit that provides a review of what the class covered. When I started doing this my handout were just a few pages but grew to where they included printouts of introductory articles I had written for magazine articles or for the Glass Campus website as well as assorted tutorials. As my class handouts got increasingly larger (some more than 30 pages) I switched from a print handout to a DVD. These handouts now include all the videos used in the class, a collection of text articles and dozens of high quality photos of projects and techniques.

Although I discourage students from taking notes in class, I take lots of notes and encourage anyone that teaches to do the same. Questions asked by students often give me ideas for things to add to future classes or for things to be added for future handouts.

Class Evaluation

The best way to learn how well your students respond to your classes is to ask each to complete a Class Evaluation. This feedback from students will help you improve your teaching skills and help you make your classes more effective. Comments and complaints from students will also provide ideas for things to be added or even ideas for entirely new classes. Make a point of asking them to be completely honest and offer their suggestions for improvements.

Many of the classes and webinars I do are a direct result of student requests. Often ideas suggested for a website tutorial or magazine article grew into a new class or even a DVD or webinar. The book you're reading right now is an example of that. Numerous students asked me to write an article or tutorial on how to set up a class. I started writing an article expecting it to be used as a magazine article or website tutorial. As I collected all the information I thought was important and should be included, I realized there was so much material it really should be a complete book. Maybe next I'll take a lot of this material and produce an online webinar similar to the one I do on Selling Your Work?

Chapter 10 includes a sample Class Evaluation form.

Chapter 5 - Teaching

**A good teacher will answer all the questions a student asks.
A great teacher answers questions the student didn't know to ask.**

Teaching Methods

There are two distinctly different approaches to teaching glass art. The Project Building approach and the Skill Building approach. Instructors might prefer one of those teaching methods, or might use a combination of both. It depends on what the instructor is trying to achieve and what each student expects.

Project Building

Having students make something simple to take with them is often the preferred way to teach beginners. The students are taught a single easy way to make some project. It could be something chosen by the instructor or something selected by the student.

The objective is to give the student some basic glass skills while making something to take home with them. The student learns enough to do simple work and feels good about having made something. This works well to encourage the student to continue working with glass and wanting to learn more. Because this approach is mostly concerned with having the student complete the project, the instructor will teach the simplest and easiest method and often have the students use whatever tools and assisting devices will help the student easily complete the project. The reliance can be more on these devices than on the student's personal skills. Using glass saws instead of cutting by hand, or breaking devices instead of tapping or breaking by hand is an example to this.

Skill Building

To do advanced work, an aspiring glass artisan must acquire more advanced skills. The focus then is more on learning and practicing those advanced skills. Skill Building requires introducing the students to all possible techniques and procedures. The student can then later move onto more varied and complex projects of their choosing. This requires the student to learn to rely on their personal skills more than on equipment. They are taught to use tools and devices to supplement those skills rather than to replace them. They're taught to experiment with alternatives and devote time to practicing different ways to build their projects.

Comparing the Methods

Each method has its place. Sometime it's possible for you to combine both methods together in a class but more often you need to choose one or the other depending on how you plan your class and what you expect your students want.

Chapter 5 - Teaching

Meet Their Needs

Give each student what they want and what they need. I like to start my classes by introducing myself then asking each student to give me their name, tell me where they're from, why they're taking this class and what they hope to get from it.

Having them each introduce themselves starts them speaking to the group which helps encourage them to speak up and ask questions in the class. When they tell me what they hope to gain from the class, I make notes so during the class I can do my best to be sure each student gets what they wanted. I make a list of those things and tick off each item as I cover it. Sometimes I apply numbers to the list so I cover the most important ones first. REALLY important points I mark with an asterisk to I remember to repeat and reinforce them several times during the class.

Some students need more help than others. Some learn slow and some learn fast. Put your most effort into helping those that need help most.

Encourage Questions

To encourage questions during the class, I like to start a class by suggesting there are 3 important reasons to ask questions in the class.

- You will get an answer to your question.
- Your questions often give others ideas for questions to ask. We all share.
- It helps me. Questions students ask help me become a better teacher and provide ideas for magazine articles, books and videos.

Justify Your Comments

If you suggest someone do something differently, tell them why. . For example, if you tell them when scoring glass to not score over a previous score, explain why they should avoid doing that. If you tell them to not fuse art glass to float glass, explain about compatible glass. As part of your class preparation you might make up a list of possible things students might do wrong and have an explanation ready to explain why they shouldn't do that. Expect to be constantly surprised at how often someone tries something you never thought anyone would try. Not a good idea to ever think of your students as idiots but a quote from Bill Lear (the inventor of the tape deck and Lear Jet) I learned to adopt when writing technical articles is, "The difficulty in trying to make something idiot proof is idiots are very inventive". Expect the unexpected. Expect misunderstanding and misinterpretation.

Chapter 5 - Teaching

Tell – Show – Do – Review

1. **TELL IT** – Tell them what you’re going to do. Provide a clear easy to understand explanation of what is to be done.
2. **SHOW IT** – Show examples of how to do it. The better you explain and demonstrate what is to be done, the more likely your students will be able to do it. If you can, provide a live or video demonstration of how to do it.
3. **DO IT** – Watch your students and step in to help where they might need it. Cruise the class to check all of your student progress.
4. **REVIEW IT** - Go over what was demonstrated and done to reinforce the original explanation and confirm everyone understood.

Encourage Innovation

Encourage each student to be creative and to innovate. Especially the ones that insist they aren’t creative. Everyone is creative –even the ones that are convinced they aren’t. I like to encourage students by telling them to not be concerned about any right way or wrong way to do things and tell them there are TWO RULES that govern all glass art.

RULE 1 – If you do the work, you make the rules.

RULE 2 – If you obey RULE 1 there won’t be a RULE 2.

Traditionalism

Accept traditionalism but don’t embrace it. Too often traditionalism kills innovation. Just because something has always been done in a particular way is no reason to assume it should always be done in that particular way. Encourage creative innovation. Break the rules. Make new ones. Art often evolves from people ignoring rules.

“Sometimes the best way to do something is the way you haven’t tried yet”.
.....Louis Comfort Tiffany

Chapter 5 - Teaching

Motivate

Motivating students is probably the most important thing a teacher can do and how to motivate students can be the most difficult skill for a teacher to acquire. It's not enough to show students how to do something. You must motivate them to want to do it. Provide steady encouragement. Be generous with praise.

The best way to motivate your students is to create small successes. Good teachers practice a teaching technique called the "Coach Approach". Get your students to succeed at some small thing. Use that success to convince them to try something a little more difficult – then move on incrementally to progressively more difficult things to build success, and confidence, in layers. This motivates your students to be less afraid of failure and more willing to try new things.

Pay attention to each student and try to learn what things encourage them and what motivates them most. Use those things as a base to increase motivation and confidence. Competence generates confidence. Confidence creates motivation.

Most importantly, project enthusiasm. If you're enthusiastic, your students will sense it and copy it. Enthusiasm is contagious. Your enthusiasm will motivate your students.

Failure Acceptance

One of the best ways to motivate students is teach them to accept that failure is an important part of the learning experience. Failure is inevitable. Not everything works. We learn from failure. We usually learn a lot more from failure than from success. When you try something and it works perfectly, you don't sit down after and ask why it worked, but when something fails, you dissect and analyze every step of what you did to figure out why it didn't work.

I tell students everything they do will be governed by the "Goldilocks Syndrome". Just like in the story of Goldilocks sampling the bear's porridge.

- **First it's too much**
- **Then it's too little.**
- **Not until the third time is it just right.**

If you aren't willing accept the failures at too little and at too much you won't get to the success at just right.

Chapter 5 - Teaching

Use Analogies

Using analogies to compare to something students already understand is an effective way to explain something.

To help students understand the need to balance what the left hand is doing with what the right hand is doing with soldering or torchworking, I compare it to learning to drive a car with a clutch. It's not that you push one pedal in and let the other pedal out but that you do both at the same time to find that "sweet spot" where they balance each other out.

To explain volume control and how glass is governed by the "6 mm rule" that causes it to always move to become 6 mm thick when heated to full fuse temperature, I explain it's like pouring pancake batter out onto a griddle. If you pour out more batter, you won't get a thicker pancake – just a bigger pancake. The batter spreads out.

To explain how sometimes when you're fusing glass in a kiln or softening it in the flame of a torch, you want to keep the heat steadily increasing and minimize holds that start and stop temperature change, I compare it to pushing a car. The hard part is to get the car to start moving. Once it starts to move, it's easy to keep it moving. If you let it stop moving, it takes a lot more energy to get it started again. Better to just keep it moving.

Part of your tool kit should be a collection of analogies you can use to explain things.

No One Best Way

There is no one best way to do things. There are quicker ways and there are easier ways and there are cheaper ways and there are more efficient ways but there is no way that does all of those things.

I used to have a little poster in my shop that said,

**We can do it good. We can do it cheap. We can do it fast.
Pick two or you get none.**

I think a good teacher will introduce students to all the alternatives and encourage students to experiment with all those alternatives. Whatever you're teaching, demonstrate all the alternatives. If you tell them you think there is a better way to do something, tell them why. Justify your claim. Let your students try everything and choose their own favourites.

"Sometimes the best way to do something is the way you best like doing it"
..... Dennis Brady

Chapter 5 - Teaching

Teach All Ways

Teach or explain all the different ways something can be done and not just your personal preference. If you have a preference or a method you believe is better, explain why. For example, when scoring glass it makes no difference if you push or you pull. Either works equally well. Encourage your students to try both ways before committing to one. I teach it's a good idea for a student to try both and then decide which way they prefer. I recommend pulling when cutting for an important reason. Easier to control. From childhood we were taught to print from top down – so we have a lifetime of manual skill drawing and printing pulling towards us. We already have muscle memory from years of doing it that way.

One teaching failure I see a lot, and it irritates me a lot, is stained glass artists that have been taught to work with copper foil and never introduced to working with lead. That's a great way to teach beginners to make little glass suncatchers and the preferred way for 3D stained glass work like lamps but it's a poor use for windows. I see many artisans making stained glass panels in foil that would have been a lot easier to do and would look better if done in lead cane.

Most people continue to work in the way they first learned. If someone is taught to do stained glass working in foil and has never been introduced to working with lead, they too often continue doing projects in foil that would have been better done in lead. Even if there is not enough time in a beginner stained glass class to do a project with both methods, each student should be introduced to the alternative methods. In our beginner stained glass class we have each student make a small panel that incorporates both foil and lead so they learn about the advantages and disadvantages of each method.

The same when students are taught to cut glass from patterns. The easiest way for a beginner is to cut the patterns into pieces and use each piece as a guide – usually by placing the piece on the glass and either scoring along the edge of the paper piece or by using it to draw a line on the glass and scoring along that line. That's the easiest way to allow beginners to cut out the desired shapes – BUT – that is the least efficient and least accurate way to do it. Far more efficient and far more accurate, but harder to master, is the trace method where the glass is placed over the pattern and scored by looking through the glass and running the cutter along the pattern line. That method takes longer to master so too often teachers fail to teach it to beginners.

You have a responsibility to teach all alternatives to your students and not restrict lessons to just your personal favourites. Let them decide which method they like most.

Chapter 5 - Teaching

Alternative Explanations

Often a student will have trouble completely understanding what you're explaining or demonstrating. A good teacher will have in their tool kit a few alternative ways to get the message across.

If a student is having trouble getting even speed and even pressure scoring glass, I reach into my tool kit for a bathroom scale. Have them place a piece of glass on the scale and score it. Tell them to watch the weight the scale reads while they score. That tells them what pressure they're applying when they score the glass and shows them if they changed pressure during the score. If they have a habit of changing speed during the score, from my tool kit comes my cell phone camera to video them scoring and play back for them to see where they changed speed.

Detection/Correction

Detection/Correction is an exceptionally effective teaching technique. You do it as a teacher. You detect something that needs correction and suggest corrections or alternatives. I often encourage students to practice this with each other. This can be especially effective teaching good cutting skills. The student needs to focus on what I call "evenity".

- **Even cutter position** – the cutter heads should be perfectly even and perfectly vertical to the glass.
- **Even pressure** – the pressure should be perfectly even throughout the score and not increase or decrease pressure anywhere during the score.
- **Even speed** – the score should be a perfectly even speed throughout the score and not speed up or slow down anywhere during the score.

It would be great if you could stand and watch each student as they score the glass and detect where they might need correction – but if you have several students, that's not practical. What you can do is teach them to practice detection/correction. Pair them off in the class and take turns. One scores the glass while the other watches to see if they can detect where correction might be needed. Applying this technique in classes has a double benefit by encouraging everyone to pay more attention to how they score.

Detection/Correction also works well with combing, sandblasting and vitrigraph when one student helps the other by watching to detect where improvements can be made. It's a teaching technique that helps reinforce lessons and encourages each student to pay more attention to how they work.

Chapter 5 - Teaching

Explain Technical Terms

Sometimes terms are just trade jargon that detract more from communication than they contribute but often they are important for accurate communication.

Technical terms promote accurate communication.

Communicating effectively with your students requires they understand the terms you use. They don't know the difference between draping and slumping glass if you don't explain it. They don't know what COE means if you don't explain it. You don't need to go through a list of all the terms used (there are thousands) but you should in your teaching outline have a list of the ones relative to the particular class you're teaching. Just as you organize your class in segments and stages, so can you introduce your students to the technical terms you use. I often provide a handout at the beginning of the class as part of the safety handout. This is where good preparation and planning pays off. If you took the time in advance to prepare the lists you need, all you need do for each class is print off a handout for each student. Included in the Glossary here is a list of technical terms you might use and should know. You could copy that if you wish but it's probably a lot more terms than you need for each class so maybe use it as a guide and select the terms you think are relative for your class.

Visualization

Sometimes the human brain can be tricked into thinking it did something by visualizing or imagining doing it. If a student has trouble remembering to step forward and back when scoring glass to make it easier to control speed and pressure and not move their arm back and forth like a piston, tell them to imagine their arm being taped to their waist so they can't move it. I have on occasion actually duct taped a student's arm to their waist to make it impossible to move. To understand how good posture makes poor glass cutting and how bending over the cutter provides better cutting, I tell students to imagine they have turned their body into the shape of a question mark. Hunched forward, butt out, looking down at the cutter. To explain how scoring glass should be done with uniform speed and uniform pressure, tell them to picture a professional opera singer that can strike a music note and hold it without changing tone or volume.

Think of ways you can teach your students how to visualize them doing something and practice doing it in their mind.

Chapter 5 - Teaching

Anticipate Questions

A good teacher will be able to answer any questions asked. A great teacher will provide answers to questions the student probably didn't know they should ask. Part of your preparatory class plan should be a list of question you expect will be asked and also a list of questions you think should be asked but, if they are not asked you make a point of providing the answers you believe your students will need.

In my Selling Your Work classes a question I expect to be asked that I believe is so important I'll answer it even if the question isn't asked is, *"How do you know what will sell?"*

My answer, *"I've been making and selling glass art for over 30 years and through all that experience have got pretty good at guessing what will sell and what won't. I'm now so good at it now, I'm only getting it wrong 4 times out of 5".*

Expect technical questions. Prepare yourself by becoming an expert. That is especially important with technical terms, different tools and various different techniques. Your students expect you to have the answers. If you can't answer their question, NEVER LIE. Tell the truth. Tell them you don't know the answer to that question. You can offer to try to find an answer for them or you can play Socrates and suggest where they might find the answer.

10 Minute Rule

Unless they have something to keep them entertained, few people will pay attention for more than 10 minutes. Many much less. You'll keep your student's attentive if you make some change every 10 minutes or less. Use visual aids - even if it's only a whiteboard or flip chart. Instead of standing in one place, move around. If possible, walk through the classroom while talking. Instead of just you talking, ask questions of the class. Ask for their thoughts and ideas. One of the best ways to keep your class attentive is by using humour. Toss out a few jokes. Keep it light. Sometimes when asked how long I've been involved with glass art, I tell them,

"Started as a hobby and decided this was way more fun than having an honest job"

When asked, what do you do if something went wrong and you can't figure out what happened? I'll answer,

"Blame it on the Glass Gods and sacrifice a chicken on the BBQ to appease them."

Chapter 5 - Teaching

Promote Optimism

Pessimism breeds pessimism and optimism breeds optimism. Each is a self-fulfilling expectation. Are your projects likely to succeed or are they likely to fail? A pessimist expects things to get worse so if things start to deteriorate they expect that to happen so they just sit on their ass doing nothing but watch them get worse. An optimist expects things to get better, so if they aren't getting better the way they expect they should, they'll get up off their ass and get busy working to make them get better. Each gets what they expected. If you want things to keep getting better, turn yourself into an optimist and put in the effort needed to make them get better. If you want your students to get better, work at promoting optimism.

One of the best ways you can help your student succeed is by promoting optimism. You can do that in two ways.

1. Provide small successes. Start them off with small projects they will succeed at. Those successes will encourage them to try more difficult projects.
2. Teach them that failure is a path to success. We learn more from what didn't work than we do from what does work. When we try something that works, we're happy it worked but we don't ask, "Why did it work?" but when something didn't work, we analyze and examine every step of the project asking, "What went wrong?"

If you promote optimism you promote success. It works for you as well as for your students.

Socratic Method

Truly great teachers will often use the Socratic approach to teaching, Instead of directly answering a question they will direct the student to where they can find answers to that question, and maybe there they will also find answers to some other questions they might not yet realize they should be asking.

You might show your students how to do tests to experiment for different results or show them how sometimes a completely different route might lead to the same place. Instead of giving your student a road map, encourage them to explore and draw their own maps.

Chapter 5 - Teaching

Science & Physics

Much of glass art relies heavily on understanding why something happens. The science and physics of what creates the effect. Some glass disciplines are more affected by it than others but all rely on something happening. If you fail to give your students some understanding of why something happens, they will have difficulty expanding on what you taught them and have difficulty learning new things. With fusing, flameworking and blowing glass they need to know how glass has different levels of softness and different temperature. The need to understand how thermal shock causes glass to crack. They need to know why glass must be annealed. They should know why some glass changes colour when heated. All these science and physics things are important.

I once had a student say to me,

“I don’t care about all the science stuff. I just want to make glass art:”

I answered,

“Then you should take a class that doesn’t include teaching it”.

Memory Aids

I use memory aids a lot myself and like to teach them to students to help them remember things. For example, to remember the safe order to turn tanks on and off for torchworking, remember to **always take a POOP**.

TURN ON - Propane then Oxygen.

TURN OFF - Oxygen then Propane.

To remember that the tin side of float glass should be fired up and air side down, remember to **TUP it. Tin side up.**

I also like to teach that creating good habits is a good way to prevent bad habits. I personally practice and teach a 3 step practice for programming a kiln.

- 1. Write down the firing schedule.**
- 2. Program in the firing schedule.**
- 3. Review what you programmed in to confirm it’s correct.**

Memory aids help. If you have some memory tricks or good habits you use, make a point of passing them along to your students. Memory aids can help a lot but maybe the one memory aid that helps the most is to

Remember to write it down. Keep notes.

Chapter 6 - Potential Problems

The problem you should be most concerned about is the one you never expected.

Tool capacity

If you're providing tools and equipment for classes, are you sure you have enough for each student or will they have to share? How much will having them share tools or equipment disrupt the class? When you plan a class, it's important you plan to have enough tools and equipment for everyone.

Stained glass

Do you have just enough soldering irons for each student? What if one fails? Do you have spares? Do you have enough grinders for the size of the class? Will students have to line up to use them?

Torchworking

Do you have enough torches? Mandrels? If you're using propane for the torches, do you have a spare tank? If you're relying on an oxygen concentrator, what if it fails?

Sandblasting

Do you have more than one sandblasting cabinet or will students need to line up to use the one you have? Do you have a big enough compressor to keep the students busy blasting or will they have to wait for the compressor to recharge?

Kilnforming

Do you have enough kilns to fire everyone's projects? Can you fire more than one at a time? Will it take several days for you to fire all the projects?

Furnace work

Do you have the facilities and space to handle multiple students?

Coldworking

Do you have the equipment for everyone to try out? Will there be enough time and equipment for each student to try out each one?

What will you do if a student asks about some specialized technique you don't have, or didn't bring the tools or equipment to demonstrate? That's where bringing a library of videos can help. A good teacher will always bring more than they expect they need.

Let's revisit the always appropriate axiom.

Better to have and not need than to need and not have.

Chapter 6 - Potential Problems

Tool Misuse

When you own the tools, you're more likely to be careful using them than would someone using them for a class. Also, you're more likely to know how different tools should be used. Letting unskilled students use tools can cause expensive damage. You might want to arrange your class so that some tools are just demonstrated by you but are not available for students to use.

Grinders

If you push hard while grinding, the glass grinds faster but it also creates extra friction which can cause the diamonds on the grinder head to come off. Also, pushing hard can create a warp in the grinder drive shaft which will cause the grinder head to wobble. If that happens, your grinder is now useless. To protect against that, instructors that allow students to use their grinders often make a point of using only larger grinders with heavier motors that have the power to resist damage to the shaft. The only way to prevent students from pressing hard enough to burn off the diamonds on the grinder head is to teach them the value of patience. Don't push. Let the grinder do the work.

Diamond Drill Bits

Drilling glass should always be done under water and requires patience to allow the drill bit to grind through the glass. Students can often be impatient and fail to pay enough attention to how much water is in place and be drilling dry. I've had a few diamond bits ruined only because a student was too impatient to let the bit grind through the glass and kept pushing so hard the bit heated up and the diamonds burned off.

Diamond Saw Blades

The same as diamond drill bits. If someone is impatient or fails to be sure there is enough water, they will push hard and create enough friction to burn off the diamonds. This is especially a problem with ring saws where trying to push the cut sideways instead of driving back onto the line wanted can cause the blade to crack. If you let a student use your saw, be sure you have clearly explained and demonstrated how it should be used.

Kilns

If you let someone load their projects into your kilns, be sure they understand how easily kiln bricks can be damaged. Especially be sure they understand that kiln lids need to be eased down gently and NEVER EVER dropped to allow to slam shut.

If you let students program the kiln, it's probably a good idea to review what they programmed in before it fires. Even a small error in the program can cause significant damage to the projects in and even to your kiln.

Chapter 6 - Potential Problems

Materials Waste

When you paid for all the materials you use you learn to be efficient with materials and keep waste to a minimum. You pay attention to where you cut off a piece of glass from a large sheet. When you use frit or powder you probably work on a piece of paper that will allow you to return to the container any that spills off your project.

Your students won't be as careful and as attentive to waste as you are. Keep that in mind when you let them choose what to use for their projects. Pay attention to what materials students take out to use and how they use the materials. Students with poor cutting skills can waste a lot of glass. I once did a class in Weaving Glass where the class description clearly stated a need for good cutting skills but over half the class was unable to cut 1/2 inch and 3/4 inch wide strips and wasted almost all the glass I had set out for the class. Now, in all my Weaving classes, I pre-cut a collection of strips different widths and different colours for students to choose from.

Giving each student a Student Kit of materials is an effective way to control materials waste.

Chapter 10 includes an example of a Student Kit

Pilfering

Just as shoplifting is an issue every retailer has to deal with and accept as part of the cost of doing business, so is tool loss an issue for every instructor providing tools and materials for students to use. Most people are honest and would never consider taking anything but there are always a few not so honest.

Some of the things that I've lost frequently include glass cutters, cutting tools, ceramic molds, candy molds, rubber stamps, jars of frit or mica, and quantities of freeze and fuse glass castings. I've even lost project examples – especially jewelry. It would be terrific if you could trust all your students to be honest and respect ownership of the tools and supplies you put out for their use. Just like retail shops, you can't perfectly prevent loss but you can try to keep it to a minimum. Two ideas that can help you reduce loss:

Student tools list

Include in each student kit a list of items that are intended to be returned.

Tool caddy or tray

Set out tool sets in caddies or trays and tell each student to be sure to return tools to the caddy or tray

Chapter 7 - Problem Students

Every class has some problem students. Part of planning and preparing for a class is planning how you can deal with any problems that might come up. You want to be fair and reasonable but you have a responsibility to be fair and reasonable to everyone in the class and not allow some students to take unfair or unreasonable advantage. If you consider contingencies in advance and have a plan in place for how to deal with those contingencies, your classes are likely to run smoothly.

Here's some kinds of problem students to expect. You might think about what you will do if you get any of these.

Chatty Cathy

Some students might be more interested in chatting to other students than doing the work or listening to what you're saying or demonstrating. If you fail to halt this quickly, others will be encouraged to do the same and you'll soon have noisy chaos in your class.

Shy

Some are too shy or too timid to ask questions. Try to identify such students and make a point of drawing them into discussion and encourage them to ask questions. Often asking them a few personal questions helps to get them more involved.

Slow Poke

Some work a lot slower than others and take longer than others to finish projects. This can create problems for you if you want the class to move onto other projects. You can help by stepping in or maybe ask one of the other students to help them. In classes where I expect each to do multiple projects, I plan set times for each project and when the time expected to complete a project approaches I give a time warning. For example, "Everyone has 5 minutes to finish this project before we move onto the next one".

Speedster

Some are so quick they rush through their projects and finish well ahead of the rest of the class. This can be as much of a problem for you as the slow pokes that take too long to finish.

Slow learner

Everyone learns at different speeds and in different ways. Some need extra time and extra encouragement. This is where it's important you have a variety of different ways to explain and demonstrate. Maybe they're in a class beyond the skill level they need before taking this class? Can you still help them or will it take so much of your time it's unfair to the rest of the class?

Chapter 7 - Problem Students

Lacking Confidence

Students that lack the confidence to try something can be a big challenge for a teacher. That's where it's important you have some good coaching motivation skills.

Time Hogs

Some will try to monopolize your time. This leaves you with not enough time to pay attention to other students. It's important to not allow this. If you give extra time to a single student it should be because they need extra time and not because they want it.

Materials Hog

Materials hogs want to use up as much materials as they can to be sure they get their monies worth. They think if they paid \$200 for a class, they want to be sure they use at least that much value in materials. Materials hogs often care more about that than what they make. In many of my classes I tell the students to go to the glass racks and pull out whatever glass they want for their projects. In one class, a lady was setting out a variety of different blue glass and bubbling happily about how pretty all those colours were and how blue is her favourite colour. Another student asked me why red and orange class cost so much more than other colours. While I was explaining why that is, I noticed the blue glass lover returning that blue glass and taking out red, orange and yellow. She liked blue better but was going to do her project in other colours only because those other colours cost more money.

Quantity over Quality

A variation of the Materials Hog that has little concern for the quality of projects done but just wants to make as many projects as possible. If you have classes that do multiple projects you should make it clear to everyone there is a limit to how many they can make.

Prodigy

Some learn very quickly and can easily become bored and distracted. Maybe you can ask them to help with demonstrations or to help some of the slower students?

Know it All

Some students think they already know everything you're trying to teach you. Some will even argue with you about how it should be done. Perhaps the best way to deal with a "knows everything" is to respond with a barrage of information greatly in excess of their knowledge level. Tell them there are many different alternatives that all work – but there is only enough time in this class to cover a few of those alternatives.

Chapter 7 - Problem Students

Craft Gadfly

Almost every class has one. Attendees that aren't specifically interested in what you're teaching but takes every craft class available. With rare few exceptions, these students rush through every project and do the shoddiest work.

Unsupplied

Even if you provide everyone with an advance list of tools or materials to bring, there will always be some that forget. You should always have extra tools and materials in case this happens.

Underqualified

Few problems are greater for an instructor than having a student taking an intermediate or advanced level class when they belong in a beginner class. I've had this a lot with students that thought they could just skip the beginner class. This requires you giving them a lot of extra time explaining beginner fundamentals. Time that should have been spent with the rest of the class. The worst example of this I've ever seen was one time my son Jason was teaching a class in Stained Glass Repair in Las Vegas. The class description clearly stated it was an advanced level class with all students expected to have excellent glass cutting and soldering skills and bring all their own tools. At class start, Jason noticed a couple unpacking brand new tools and asked if they bought them just for the class. They told him they had never done any cutting or soldering and assumed they would learn how in this class. Not sure how to deal with this, Jason phoned me and asked what I suggest he do. I told him to remove them from the class.

Overqualified

It's rare but sometimes you'll have a student that has already mastered almost everything you're teaching. You can either try to give them some extra attention or some special advanced project to work on, or maybe ask them to help you with the class.

Presumptuous

I've had a few students that came to the class with seriously unrealistic presumptions. The couple in Jason's class that expected to be taught basic glass cutting and soldering in an advanced repair class is an example. My personal worst experience with that was in a Coldworking Glass class that in which the class description clearly stated it was an introduction to a variety of different coldworking techniques. I had five Wet Belt Sanders set up for students to try out. Before I even got the class started, a girl went up to one of the sanders and turned it on. I told her those were to try out later after going over some of the many different techniques. She told me she didn't care about the other techniques. She had a project she did for a commission that needed finishing on a belt sander and only took this class so she could finish it. She was seriously pissed off when I told her she wasn't going to be allowed to run a belt sander while I was playing videos.

Chapter 7 - Problem Students

Misinformed

You can put a lot of effort into writing accurate class descriptions but no matter what you say, there are some that either ignore the description, or, I suspect, just read the class title and not bother to read the description of what the class includes. In a class I did in Mold Making for Glass Art the description listed all the techniques it would cover and specifically stated it did NOT cover making molds for lost wax casting because that subject was so specialized and involved it would need to be a class by itself. At the end of the class I had a student demand a refund because the class did not cover lost wax molds.

Unrealistic Expectations

Sometimes a student will assume a class provides a lot more than it can. My best example of that was a class in Beginner Torchworking where a lady gave me photos of 12 projects she expected to make in the class that she planned to give as gifts. They were all advanced level projects – one from the cover of a Glass Art magazine. At first I thought she was putting me on and told her, “I wish I could do work like that”. Her response, “It can’t be that hard. When I was in Mexico there were artists working on the sidewalk that could make a figurine in only a minute or so”. I told her that artist that could make a lovely little seahorse in about 2 minutes had probably made several thousand seahorses. Not sure how best to deal with her unrealistic expectations, I told her, “Not only are you not going to make anything vaguely like any of those photos, I think you’ll be seriously thrilled if you can get one of your beads to come out round”.

Projects Only

I’ve have students that made it clear they have no interest in learning about any of the technical science and physics. They just wanted to make stuff. I had one tell me, “I don’t care about the science. I just want to make glass art”. I told her if she wasn’t willing to take the time to learn the science, she should be taking one of the project classes that didn’t include any of the science or physics instructions.

Chapter 8 - Writing

Just as teaching is a skill you can learn, so is writing. To be an effective teacher, you should be as effective at writing class descriptions, tutorials, class outlines as in everything else you use for teaching. If you plan to use videos as part of your classes, you want to be skilled at writing video scripts and planning videos. You might also want to write articles for magazines and perhaps produce webinars to teach online.

Writing Guidelines

Planning and organization matters most. Everyone has a different writing style but some things are universal and apply to all writing.

- **Present tense.** Describe doing it now.
- **Action words.** Describing doing it rather than thinking about doing it.
- **Logical order.** Write instructions in the order they most logically will be done.
- **Careful word choice.** Choose your words carefully. Write for expected age and skill level of your audience. Unless it's essential, avoid using trade jargon.
- **Positive actions.** You say "do this" rather than "this is how it is done"
- **Write in second person.** Say, "You do this".
- **Include alternatives.** Include alternatives. Suggest different ways you might get the same results
- **Graphics.** Use photos and graphic to help explain what you're saying.

Collect Material First

Start by collecting lots of material. Collect everything you think you might need. Not just what you're sure you need. Just as you should have extra tools and extra materials for your classes, you should have extra material for any writing you do. Create files for photos and notes and videos. Make videos whenever you can. Take photos of everything whenever you can. It is always worth repeating:

**Too much is better than too little.
Better to have and not need than to need and not have.**

Chapter 8 - Writing

Keep Notes

Make notes constantly. Whenever you think of something, write it down. Of all the memory improvement techniques, none work better than remembering to write it down. Make notes when you first think of things. Don't fool yourself into believing you'll remember to write it down later. Do it now. Right now. I keep a voice recorder with me at all times and a note pad beside my bed. Whenever I think of something that should be added or remembered, I leave a voice memo to myself or write a note. I especially love sticky notes and have them stuck all over the place.

Some of my best ideas come while I'm lying in bed just drifting off to sleep. I expect many of us have had the experience of waking up in the morning thinking,

“I had this terrific idea last night. I can't remember what that idea was but I do remember thinking it was a terrific idea”.

When you have one of your terrific ideas, maybe it would be a terrific idea to write it down or record it before it gets terrifically forgotten?

Multi-purpose Library

There are a few differences in how you write for different applications but all writing has in common the need to collect material and carefully plan everything before you start writing. When you're collecting materials and taking photos and recording videos you might focus on only what you need for a specific project or article. Or, you might collect material whenever it's available expecting to use it sometime later perhaps for different applications. If you build a library of text articles and photos and videos, you will have them available to include later in other applications. Material you originally wrote for a class handout or a website tutorial might form the foundation of a magazine article or become part of an online webinar. A project you did for a class demonstration might be something to include in an article or webinar.

Instead of just writing articles or taking photos or videos just for some specific project, do them as additions to your multi-purpose library for future applications. Write notes and record ideas when you think of them. Take photos and videos whenever you have a chance. Add them to your library for possible future use.

Chapter 8 - Writing

Putting it Together

Organization is everything. Writing is the same as teaching. The more you plan and the better organized you are, the better it will be.

Identify. What is the focus of what you're trying to communicate?

Outline. What all do you plan to cover?

List. Make a list of all the material you have available to draw from.

Organize. Sort your list into the most logical order.

Rough Draft. Write your first draft.

Review. Review your draft and ask yourself if there are needed changes, are there things you missed or should the order be changed?

Next Draft. Rewrite with the changes from your review.

Get Help. Have someone else read what you wrote and offer suggestions.

Final Draft. Make all the last minutes changes and additions.

Class Outlines

Most of the things you write are for others to read but Class Outlines are for you to use in your classes. They're used as a combination road map and check list to help you stay on track during the class and keep everything in the planned order. Your Class Outline would include:

Check List. What all the class covers.

Preferred Order. The best order for presenting elements of the class.

Schedule. When to show videos or do demonstrations.

Chapter 10 includes some samples of class outlines I use for my classes.

Chapter 8 - Writing

Class Schedule

If your class includes many different techniques or subjects and multiple projects, it's important to control how much time is spent on each subject or project to be sure you have enough time to cover everything. Too much time spent on something early in the class might leave you with not enough time to cover other things you had planned for later in the class. This can be especially a concern if you have some students that are slow finishing their projects. By planning a schedule for a set time to move onto each segment you can be sure you keep your class running smoothly and complete everything you wanted completed.

Chapter 10 includes an example of a Class Schedule I use for such a class.

Tutorials

Writing tutorials requires careful attention to planning and organization. Whether you're writing it for a class handout, for online publication or a magazine article, the same "Putting it Together" guidelines apply.

Be orderly. Organize the tutorial in the most logical order.

Be detailed. Explain every step and every detail.

Be specific. Avoid generalizations and refer specifically to the tutorial subject.

Assume nothing. Assume you reader knows nothing about the subject.

Chapter 10 includes an example of a Project Tutorial

Chapter 8 - Writing

Magazine Articles

Writing a magazine article provides a triple benefit. You get paid to advertise, you promote your name as an instructor, and because of the size restrictions, you polish your skills writing other things – like webinars and class plans. If you want to submit an article to a magazine for publication, don't just send them something unsolicited. Every magazine has different requirements for submissions. Contact them first and ask what their requirements are and what they will accept. Some things for you to consider:

Size. Magazines usually specify a minimum and maximum size. This requires careful planning and editing to fit into the desired space.

Subject. Are you proposing a technical article that will be mostly text or a project article that will need numerous photos? Do you want to take a small specialized idea or project and expand it into a full article or do you want to take a broadly generalized subject and condense it into a short article?

Photos. If you submit photos, they **MUST** be the highest possible resolution you can do. Magazine editors love photos. Lots of photos. Give them lots to pick from. Let them decide which ones they want to use in the article.

Payment. Each magazine has its own pay rate based on size of article and kind of article. It's a fixed rate and usually non-negotiable unless you're a very well-known high profile author.

Deadline. Magazine publishers plan far ahead before printing and have a deadline date when all material must be ready before they start planning and organizing what will be included in their next issue.

Publication. If they accept your article, don't assume that means it will be included in the next issue. It might be some time before your article is printed. Perhaps months. Maybe even longer. Magazine editors really like to have a library of material they can select from. Just as you should heed, they also live by the axiom:

Better to have and not need than to need and not have.

Chapter 8 - Writing

Webinars

Webinars are internet tutorials. Sometimes they're just recordings played like the ones on YouTube but more often they are broadcast live using a combination of videos and PowerPoint intermixed with a question and answer exchange. The great thing about internet webinars is they allow you to reach out to students across the globe. Your students don't have to travel to take a class but can take it from the comfort of their home.

Online webinars usually only allow for relatively short videos with maximum allowable video length dependant on the program used to broadcast the webinars. The ones I've been doing with Glass Art magazine have a maximum time of 7 minutes for each video. The webinar consists of playing a video followed by a question and answer exchange then playing another video with another question and answer exchange.

Preparing a webinar requires the same planning and organizing as writing an article or tutorial plus special concern for timing. Some special considerations.

Segments. When scheduling videos, plan segments for a complete subject or a full segment of part of a subject. Try to avoid having a part 2 or part 3 extension. For example, if a project being demonstrated includes both fusing and slumping and can't be completely in the video time allowed, split it into two parts with fusing and slumping in separate videos.

Power Point. If you can't prepare a video demonstration, consider using Power Point with photos or text.

Photos. You should include lots of photos. They can be part of the videos, can be shown between videos or can be shown after all the videos have finished.

Interval dead time. There's a time delay after a video is played before the next one starts. If you have been asked questions, you use this time to answer them but if there are no questions to be asked there will be dead time in the broadcast. You don't want dead time. You should have a list of "interval comments" to read or a list of things you might comment on to fill in that time.

End of webinar. Webinar times are planned to allow for a question and answer exchange. The ones I've been doing are scheduled to be 2 hours with an expectation of about 20 minutes of question and answer exchange. What happens if you get very few questions, all the videos have played and your still have time left? Just like you have material to use in the intervals between videos, you should have a collection of material to use if needed to fill in time at the end. My favourite is to have a quantity of photos in Power Point to show and discuss. I can vary how much discussion for each photo depending on how much time is left.

Chapter 8 - Writing

Videos

You don't need be a professional actor or videographer to produce a relatively professional looking video. Some things to keep in mind when you're being filmed.

Smile. Appear happy. Not crazy drunk happy – just pleased to be here happy. Think of something that pleases or amuses you so your smile is natural and not artificially forced.

Relax. Imagine you're talking to a close personal friend that specifically asked you explain this to them.

Stay informal. This isn't a TV interview or a college lecture. It's just you talking to a friend. Talk to the camera the way you would talk to a close friend or family member.

Be animated. Show some enthusiasm. Make the viewer believe you're excited to have this chance to share with them.

Keep active. Intermix your video with graphics and photos. Change to different views. Try adding slow motion and close ups views.

Make extra. Make LOTS extra. Lots of material. Film everything so you'll have lots of material to pick through after to select from. A guideline I use is to expect to take about 20 minutes of video for every minute I use in the finished edited video.

Video Script. Your videos will be most effective if instead of trying to remember what to say during the video, you work from a written script. Professional actors will memorize a script so they recite the words while acting but even the best of them often make mistakes that require retakes. Sometimes it takes dozens of retakes. When you watch news commenters or politicians speaking on TV, often they don't speak from memory but instead read from a script on a teleprompter. You can talk during the video if you feel comfortable doing that. I prefer to write the script to record the voice and edit it over the video after.

Multiple Cameras

Videos are always more interesting if the view changes to different angles. You can do that by doing separate videos from different angles and editing the footage together but it's more efficient if you set up multiple cameras shooting at the same time and edit bits of footage from each later. Doing a demonstration with one camera pointing straight at you with another pointing down at what you're doing will provide materials you can edit and splice to show multiple views.

Chapter 8 - Writing

Teleprompter

You probably can't afford to buy a professional teleprompter but if you have someone to help, you can make your own. Here's my homemade teleprompter.



Here's what the camera sees.



Here's what I see looking at the camera.

I set the camera on a tripod on one side of a table while I stand on the other side of the table while somebody, in this case my son Jason, holds up the script for me to read. Something things to consider if you try this:

Font size. Be sure to print the material to be read in large enough font to read without squinting.

Page change. If the amount of material to be read can't be included in one page, have some signal to send to the script holder to signal page change. My signal is to when I want the page changed to wave my hand where it won't be seen on camera.

Highlights or full text. It's your decision whether you want your script to just have highlights as reminders what to say or have the fully script printed to be read as printed.

Page position. Put the pages below the camera. That way it appears in the video as if you're looking directly at the camera. If you have it held above the camera or to either side it will be obvious you are not looking direct at the camera.

Chapter 8 - Writing

Video Editing

When you plan and prepare to do videos, think carefully about how you will edit them. It will look amateur if you just turn the camera on and video everything. You don't have to show an entire process – just the important parts. Try to do it like they do in a cooking show where they show the beginning, show some important steps in the process, then show the completion. There's a variety of video editing software that can help you produce professional looking videos. Some different ways to video you can consider:

Video cut. Video everything and cut out any material you think isn't needed.

Video splice. Produce a collection of video material and select bits of it mixed with photos spliced together.

Voice in. Speak during the video to record with the film.

Voice over. Video without any sound and add voice over after from a script. Adding voice after will produce higher quality sound.

KISS. Keep it simple. A few special effects can make your video interesting but too much is just a distraction. That can especially apply with music over the video. It's usually distracting.

Patience. Editing will likely take twice as long as you expect.

Graphic Drawings

Good drawings can sometimes be even better than videos or photos. Find a good computer program and learn how to use it. There are many available in a variety of differing costs and quality. Even some free ones. Many good ones have a free trial period. Alternatively, instead of buying a program there are many very good and easy to use ones you can rent. Just pay for the time you're using them to produce drawings. That's another good reason for careful planning. Get everything prepared in advance so you're only paying for rent while you converting your ideas to graphic drawings.

Chapter 10 includes some examples of graphics I prepared for tutorials.

Chapter 8 - Writing

Power Point

PowerPoint is a presentation program developed by Microsoft but also available in a version to work on Apple computers. The software allows users to create anything from basic slide shows to complex presentations. It can be an exceptional tool with video tutorials and online webinars. It takes a bit of practice to become proficient but is well worth the effort if you want your presentations to look professional.

Chapter 10 includes an example of a Power Point presentation I use.

Books

If you want to get serious about writing you might think seriously about writing a book. If you can write tutorials and articles you can write a book. It's just more material.

In the past, producing a book was a far bigger problem than it is today. You either had to find a publisher to print and distribute it for you or take the risk of self-publishing. Self-publishing is risky. You need to make a hard decision between printing more copies to reduce the per book printing cost and wonder if you could sell enough to justify printing that many or print smaller quantities at higher cost and wonder if you could sell your book at a higher price. Technology has provided some options to reduce your risks.

E-books

E-books are books that are not printed but instead transmitted as an email attachment. You prepare all the material the same way you would to print a book but instead of printing it you put all the material in a file that that be sent electronically. This has three important advantages. It eliminates both print costs and shipping costs as well as providing immediate delivery. Some E-book buyers just read from an electronic device while others will have them printed out to produce hard copy books. Let the buyer choose.

On-demand printing

Relatively low cost ink jet or laser printers will allow you to print single books on demand as ordered. They aren't as high quality as offset press printing but good enough to be acceptable. Small machines to ring bind books are inexpensive and many readers have expressed preference for ring bound books.

Chapter 8 - Writing

Press Releases

Writing a press release and sending it out to newspapers and TV stations can be exceptional advertising and all it costs you is the time to prepare the press release.

The best advertising is often the advertising you got free.

Reporters love having a story dropped in their lap all done ready to print. It might fit in their arts section, human interest, or business entrepreneur section. Put together a package with lots of information. It should include:

Teaser. Something to spark interest. Something you think their readers or viewers might be interested in. What makes you or your business special?

Outline. What is it about? Is it about what you make? About what classes you offer?

Biography . The history of you and your business.

Photos. LOTS of photos. The highest resolution you can. Just as you do when you prepare material for your own articles or for submission for a magazine article, provide lots to select from. Let them decide which they like and want to use. Sometimes they will phone with a few questions or even send over a reporter with their photographer for more material but if you give them enough material all they need do is pick out what they want to use, your chances of having something printed will be much greater.

Videos. TV stations will almost always want to do their own filming but will often use video provided to them. If you sent material to a TV station hoping they will broadcast something about you, some video material added along with the rest of your press release is likely to increase the likelihood they'll be interested.

Chapter 8 - Writing

Artist Portfolio

Although producing an Artist's Portfolio is not something you are likely to be teaching, it is something you might want to do for yourself and be a part of your writing skills. Perhaps you might want to help a student write one to help them sell their work?

Cover letter. Introduce yourself and your work to the gallery and explain why you selected that gallery.

Artist Statement. Write in the first person and keep it personal. Tell what motivates you, why you choose the kind of work you do and the process you use to do it.

Artist Biography. Write in the third person and include your background, education, experience, exhibitions, etc.

Artist Resume. Your accomplishments. Awards, exhibits, publications, other gallery representation.

Portfolio. Choose your best work and provide high quality photos or slides. Many artists will provide a DVD or thumb drive with their submission.

Price List. Include titles and prices of the submissions in your portfolio.

Self-addressed return envelope. If you want your material returned.

Why that gallery?

Although it has nothing to do with how you make a presentation to a gallery, an important part of your planning and preparation should be how you select a gallery.

- Is it only because it's a prestigious gallery?
- Will the gallery benefit from adding your work to what it already has?
- Does the gallery already exhibit a lot of work like yours or are you offering them something they don't already have?
- Is your work appropriate for that particular gallery?

Chapter 9 - Special Considerations

There is always something more to consider.

How Much Work Space?

How much space will you need for each student? You want to fit in as many students as you can in the space you have but don't want to squeeze them in so tight they don't have enough space to work on their projects.

1. **Ideal.** 36 inch (90 cm) wide. This will allow each student enough space to spread out all the tools and materials they're using without feeling constricted.
2. **Good.** 30 inch (72 cm) wide. This provides enough space to work in but will require each student take care to keep all their tools and materials inside their designated space.
3. **Minimum.** 24 inch (60 cm) wide. This is the minimum space that will allow each student to work without constantly bumping into or interfering with the person next to them.

When you set out your classroom, you might mark out the designated space for each student. Strips of painters tape work well for this or pieces of cardboard or paper for each student work area.

Short Students

You must decide what height the work tables will be for your classes. If you're teaching as a guest instructor you have no choice but to work with what that studio has but if you're teaching from your home studio you can design for maximum benefit. Most studios build their work tables 36 inches high. That's because it's the standard height for kitchen counters and thus a height most people are already comfortable working at while standing. Not all work is done standing but much of it (like cutting glass) is always better done standing and many people prefer to work standing. Standard table height is 30 or 32 inch. That's comfortable to work seated but, unless you're very short, it can be uncomfortably low to work when standing and produce a strain on your back.

Consider....it's easier to raise the person than it is to lower the table.

For students of varying height, in our studio we built wood boxes 6 inch, 8 inch and 12 inch tall as step stools designed so each can be turned onto different sides to provide whatever increased height wanted. For any needs higher than that, we have a couple of small step stools. These work exceptionally well to allow even the smallest children to work at the work tables and to even use the standing sandblast cabinets.

Chapter 9 - Special Considerations

Special Groups

Arranging classes for special groups requires special planning. Some can be done much like your regular classes by some are significantly different and will require significantly different planning and teaching approaches.

Schools

Schools often take groups out on field trips to give their students a special experience. I've have student groups varying from grade 1 to grade 12 and even done special full week classes for university BFA or MFA students planning to teach art.

I make a point of including a little science and glass history in all classes with young people. They're fascinated with how glass is made and the history of how technology influenced glassmaking. I start off by suggesting the first idea for making glass probably came from some caveman that found glass on a beach after a lightning bolt melted some sand. Everything since then has been a series of experiments in ways to make glass and how to add things to it to make it coloured. The kids are especially intrigued by the idea that glass is not a true solid but is instead a liquid being held together to act like a solid. This is why it has different physical properties at different temperatures and why when we understand how it does that, we can control what it does by controlling the temperature. I often start classes with kids by saying,

I'm going to show you how we use science to make art.

Clubs

Just like schools, Boy Scouts, Cubs, and Girl Guides all like to arrange outings for their groups to have a fun and educational experience.

Birthday Parties

It's becoming increasingly popular with parents to instead of having a conventional birthday party, to have the birthday group get together for a fun shared experience. They will often want to bring food and refreshments to make the event a party so you will have to plan for space for that.

Corporate groups

Team building experiences has always been popular with companies. They know that having all the workers doing something together encourages them to work as a team. I've done dozens with some companies repeating on a routine cycle. The feedback from participants has been outstandingly positive with many insisting this is the best team experience they've ever been involved with and specially liked how it was a combination of education and entertainment. Like birthday parties, companies often want to bring along snacks and refreshments – sometimes including alcohol.

Chapter 9 - Special Considerations

Family & Friends

Just as companies like to have their employees doing something together as a fun team building exercise, families often want to gather their gang together to have some fun shared experience – like a special event reunion or gathering. Sometimes, like corporate groups and birthday parties, they will want to bring along food and refreshments. I've done family groups varying from an hour or so to full days.

Planning and managing such groups can be a special challenge for you. Where other groups are reasonably close in age, family groups can be a wide age spread. You might need be prepared for an age spread all the way from 6 to 60. The young ones are your greatest challenge. They rocket through projects. You'll get a lot of, "I'm done. What else can I do?"

Drop In

If you have the space, you might consider offering studio/workshop drop in where people can drop in to use your space and equipment to work on whatever projects they want to. If you do this, you should clearly specify what it includes and what it does not include. Be careful to not have people think they can do this to get personalized instruction to avoid taking a class or to think they can just show up unannounced whenever they please. In the class listings on our website, and on a poster in our shop, we clearly outline what is expected:

Check ahead. Most of our classes are evenings but we sometimes have school groups or team building classes during the day and won't have space for drop in. Please check ahead before coming in.

Assistance. Drop In is not a class but whether you're a beginner or a seasoned professional, our skilled artisans are available to help you with your projects.

Tools. You can bring your own if you have them or you can use ours. We bought all the toys and encourage you to experiment with different tools and equipment.

Unstructured

If you feel courageous, you might try offering a class that isn't structured but instead allows each student to choose what they want to learn. This is like Drop In but includes some instruction in the student's choice of projects. Such classes require a LOT of advanced planning to have everything prepared in advance.

**Chapter 10 includes outlines for the
Glass Art Anarchy and Glass Art Playtime classes I do like that.**

Chapter 9 - Special Considerations

Mixed Project Classes

It's easiest to have everyone in your class make the same thing or at least doing something using all the same technique but it is also possible to do classes where each student chooses from a variety of different projects and techniques. I do a weeklong Glass Art Anarchy class where everyone does whatever they wish to try and Glass Art Playtime classes where each chooses from 9 different options.

Embossed	12x12 embossed/sculpted panel.
Float Fun	8x8 or 8 in. round mosaic project & tempered chips project.
Fusing	8x8 or 8 in. round project for a tray, sconce or vase.
Glass Fossils	8x8 project for a tray, sconce or vase.
Pebble Play	8x8 project for a tray, sconce or vase.
Suncatcher Fish	make 3 suncatcher fish.
Wind Chimes	all the parts to make a wind chime or mobile.
Xmas Ornaments	12 assorted ornaments.

Setting up to do such multiple projects allows me to offer a variety of options while also increasing the likelihood I'll attract enough interest to justify running a class. Some of these classes will have as many as 12 participants. What's the trick to managing such classes?

Planning and preparation. Lots of planning and preparations

Project Plan card. Each student starts by deciding what they plan to make and how they plan to make it.

Tools. Everything they might need for any of the projects is set out in advance.

Materials. All materials and components have been prepared in advance for each to select from.

Student Kits. Wherever possible, student kits are set out with everything needed to complete the chosen project.

Instructor Kits. For each project choice I have a drawer with an instructor kit including demonstration samples and class outlines for me to use.

Printed Instructions. Instructional guides for each of the options have been printed out to answer most of the questions students will have.

Videos. A laptop with monitor connected is set out with video tutorials each can play if they wish.

Chapter 9 - Special Considerations

Handicapped Access

Can you do classes with handicapped students? Does your classroom have wheelchair access? Would you have enough help available to move a person in a wheel chair up stairs? Is it something you will consider? It requires some extra work and special arrangements but perhaps something you might try.

I've had several students in a wheelchair take classes. Our studio classroom room has tables 36 inch (90 cm) tall the same height as standard kitchen counters. It's a comfortable height to work standing. Most glass work is best done sitting but we have a quantity of bar stools for anybody that wants to sit. These counters are too high for someone to work sitting in a regular chair or in a wheelchair. We also have a 6 foot (80 cm) long table with fold down legs that can be set out for someone to work at while sitting in a wheelchair. A small card table could work as well.

Our sandblasting cabinets are designed to work standing and are a perfect height for most adults. A 36 inch square wood platform 12 inches high works great to lift the student and wheelchair onto to set and enjoy sandblasting.

Rented Space

Maybe you've been asked to offer classes and would like to but don't have space in your home studio? Consider offering classes at your local community center or even renting space to offer classes. Check with your local legion hall or community service clubs to ask if they would rent you space. Many public schools are willing to rent out classrooms for evening or weekend classes. If you have people wanting to take classes and you want to provide classes – find a way.

Lunches & Snacks

If you're doing a full day class, have you thought about what your students will do for lunch? Are there restaurants nearby? Can you provide a list of places for them to consider? Will you tell them to bring something? Will you provide lunches?

You decide what you think works best. My choice for single day classes is to tell everyone to bring a lunch and I'll provide coffee, tea and soda pop. For weeklong classes, having everyone leave and return at different times can be disruptive so I often provide lunches and beverages for my classes.

Chapter 9 - Special Considerations

Accommodation

If you expect students to come from somewhere out of town to participate in your classes, perhaps you can provide suggestions for places to stay and things to do when not in class? I have many that come to our studio for classes and combine the classes with a vacation experience. I give them a list of places worth visiting.

Project Delivery

If you have a number of people in a class and need to fire everyone's project in your kiln (sometimes 2 firings for each project) it's important you explain to everyone it might take a few days. They can't expect to come get their finished project tomorrow. You should ask if anyone has a special need to get their projects early so you can schedule your kiln firings to allow doing their projects first.

After Class Questions

There will always be some that come before the class with a list of questions and others that hesitate to ask questions during that class and save them until after the class. I try to discourage both.

Before the class, you're setting everything out to be ready for the class and don't have time to answer questions. After the class, you're busy cleaning up from the class and don't have time to answer questions.

For years when I taught at GlassCraft Expo in Las Vegas I always missed lunch. If a class ended at noon, I'd have some students waiting to ask questions after the class while I was busy cleaning up from the morning class then when I was starting to set up for the afternoon class I'd have others come in early to ask questions. No time for lunch.

In my class introduction I make a point of asking everyone to ask all their question DURING the class so we all share in the discussion. My business card is included in each student handout. I suggest if anyone thinks of a question after the class, or if they have a question they don't feel comfortable asking during the class, to either email or phone me after.

There will always be some that ignore that request but at least now you can respond to them, "As I suggested earlier, if you have any question please feel free to contact me later. I'm sorry I don't have time to help you now but I promise I will later."

Chapter 9 - Special Considerations

Spectators

Sometimes someone will ask if it's okay to just stand and watch the class. It might be a friend or family member that just wants to stay or might just be someone that is interested in the class but just doesn't want to pay for it. It's your decision whether or not to permit this. The problem with allowing spectators is far too often they become participants and start getting involved in the class.

I've had classes where spectators started asking question and even some that started offering suggestions. Go back to Chapter 1 and reread the article Practice Patience and imagine how hard it will be to remain patient with such interruptions.

This can especially be a problem in classes of children where parents want to stay during the class. There will always be a few "helicopter" parents that hover over wanting to "help" their children with their project. The end result is the parent does the project for the kid. When that happens, the kid doesn't like it, the other kids don't like it, and I don't like it. I don't like it a LOT. Simple solution. I sometimes ban the parents from the classroom. Tell them to go away and come back after the class or just stand and watch but do NOT assist or participate in any way. Just watch. I've had a few kids make a point of thanking me after the class for doing this.

In classes organized for groups of kids, like schools, girl guides or boy scouts, some parents volunteered their time to taxi groups of kids. I think it's fair to let them stay during the class, but don't want them "helping" the kids so I put all the parents aside in a different area and give them some projects of their own to work on. Winners all around. The kids are happy. The parents are happy. I'm happy.

I've had a few instances, both in my home studio and as a guest instructor, where someone asked if they could audit the class and just watch. I always refuse thinking it's unfair to all the other students, but if that happens to you, decide for yourself whether or not to accept.

Other than for special reasons, I usually refuse to allow spectators for 3 reasons.

It's unfair to the other students.

It can be disruptive to the class

They aren't covered by liability release or liability insurance.

Chapter 9 - Special Considerations

Complaints

You did everything you could to provide a great class but have someone complain they didn't get what they wanted or expected. How do you deal with it? What do they want? Is the complaint reasonable and legitimate? If you believe they have a reasonable or legitimate complaint you should do what you can to make up for it. A discount? A refund? A free class? It's always a good practice to do everything you reasonably can to make your student customers happy and satisfied with the experience you provided. There is a guideline smart business people apply:

**A happy customer will tell 10 friends
but an angry one will tell everyone that can get to listen.**

But.....sometimes the complaint is neither reasonable nor legitimate. Those complaints are a lot harder to deal with. If you teach often enough you will get some. I've had a few interesting ones.

Once in a class at Las Vegas, after the class a student asked for a full refund of the class fee because the class project had been done using COE 96 glass and she worked with COE 90 glass. She knew before the class started it was using COE 96 glass, stayed through the entire class and finished the class project. Not until after the class was complete and her project completed did she decide to ask for a refund.

In a Mold Making class in which the class description clearly stated it did NOT cover lost wax casting molds, a student completed the class, including making numerous molds using different mold making techniques, then after the class asked for a full refund of the class fee because the class didn't cover the lost wax mold making technique she wanted to learn.

Such unreasonable complaints are hard to deal with. Do you try to offer something to satisfy the complaint or do you tell the complainer to suck sand? Be good to your students but do not allow them to take advantage of you.

Be fair – but be firm.

Chapter 10 - Special Explanation

As I was collecting and organizing all the material for different parts of this book I thought it would help you to plan and organize your classes, if you had examples of some of the things that have worked well for me – so I decided to include some for you to consider.

Sample Forms

These are forms I routinely use in my classes. Feel free to download and print them out to use for your classes if you wish.

Examples

I included here examples of the some of the plans and outlines I use for my classes. I hope they've help you as guides to create your own teaching tools to organize your classes.

Teaching Assist Ideas

These are some of the things I do to plan and prepare in advance for classes. They've helped me a lot to ensure classes run smoothly. Perhaps they'll give you some ideas for how to make advance preparations to efficiently manage your classes.

Demo Samples

The best way to explain something is usually to provide examples. These are some of the demo samples I made to use in classes to pass around for students to see examples of different techniques and different project ideas.



RELEASE & WAIVER

Class: _____

Instructor: _____

Agreement to release Liability, Assumption of Risk, and Indemnity between 'Undersigned' and _____ herein after called the Provider.

I, _____, (hereinafter the 'Undersigned') reside at _____, Address

City Province/ State Postal Code Country

On behalf of myself, my personal representatives, heirs, next-of-kin, spouse and assigns, I acknowledge that I give up certain legal rights when I sign this document which includes the right to recover damages to personal property, bodily injury, and death as a result of my activities in **Provider** programs. Furthermore, I HEREBY:

1. Acknowledge that there is an inherent danger involved in being transported to and from various classes and in working with glass at various temperatures, and that attending **Provider** programs involves risks that may cause personal injury or death.
2. Voluntarily assume the risk and danger of injury or death inherent in the use of the equipment and tools provided by **Provider** and its instructors.
3. Release, discharge and promise not to sue **Provider** doing business under its own name or any other name and/or any of its owners, officers, employees, instructors and agents (hereinafter the 'Releasees') for any loss, liability, damage or cost whatsoever arising out of or related to any loss, liability, damage or injury (including death) to my person or property.
4. Release the Releasees from any claim that such Releasees are or may be negligent in connection with my educational experience, including but not limited to instruction on glass working techniques, transportation to and from seminar activities, maintenance or care of glass working tools and equipment.
5. Indemnify, and save and hold harmless the Releasees from any loss, liability, damage, injury or cost that may arise out of or in any way connected with my use of glass and any of the tools and equipment provided or any acts or omission of Releasees, or other employees or agents.
6. Agree to abide by, follow instructions and rules established by **Provider** or any of its instructors, agents or employees with regard to safety operations in using glass and glass working tools or equipment.
7. The Undersigned expressly agrees that the foregoing release and wavier of Liability, Assumption of Risk, and Indemnity agreement is governed by **Provider** and is intended to be as broad and inclusive as is permitted by _____ law, and that in the event any portion of this Agreement is determined to be invalid, illegal or unenforceable, the validity, legality and enforceability of the balance of the agreement shall not be affected or impaired in any way and shall continue in full legal force and effect.
8. Acknowledge that this document is a contract and agree that if a lawsuit is filed against or its owners, agents, employees or instructors for any injury or damage in breach of this contract, the Undersigned will pay all attorney fees and costs incurred by **Provider** in defending such action.

I have read this document in its entirety and agree to the conditions:

Print Name Signature Date



Fusing & Slumping

Keep Sharp

Most glass cuts result from not paying enough attention to what you're doing. Razor sharp edges can slice like a scalpel, and thin slivered shards will impale like a spear. It's important to always be aware of the potential for serious damage when you work with glass. Wearing open-toed shoes around sheet glass is needlessly dangerous. Complacency causes more injuries than anything else. Keep yourself sharp – always pay attention to what you're doing – and keep a handy supply of band-aides on hand.

Safety Glasses

Always wear safety glasses when cutting or grinding glass. You can buy expensive glasses, or cheap ones – any kind is better than nothing as long as you do wear them. Cheap safety glasses work fine. They just won't last as long as the more expensive brands. Whatever kind you choose, it's a smart idea to get ones that have a bottom that sits against your cheek. When you break glass or grind it, shards can fly up, hit your cheek just under your glasses, bounce off the inside of the glasses, and go straight into your eye. This happens often while grinding, when the glass bits can shoot out fast enough to imbed firmly into your eye.

Glass Dust

It's important to be especially careful to avoid inhaling glass dust. When you clean up glass dust do it with a wet sponge or cloth. If inhaled, glass dust can cause serious and permanent damage to your lungs. You can't just go to the hospital and have it removed. Once you breath glass dust in, like asbestos, it's there forever. Protect your lungs – wear a dust mask or keep the glass dust wet.

Mold or Kiln Wash Dust

Dust from kiln wash ceramic molds is a nuisance by not seriously dangerous. It should be treated the same as drywall dust. A small amount won't hurt you. If you're bothered by it, wear a dust mask. The cheap disposable kind works as well as any other.

Kilns

When firing to full temperature, a kiln get extremely hot and holding your hand against one can cause burns – but only if you hold it there. Even at their hottest temperature, you can briefly touch the kiln exterior. Kilns are very efficient at retaining heat. If you hold your hand a few inches away from a hot kiln, you will barely notice the heat. If you open a kiln lid, do NOT look in when it's hot – unless you want to have your eyebrows efficiently burnt off. Never reach into a kiln while the elements are on.



Class/Project: _____
 Name: _____
 Phone: _____
 Email: _____

Comments: _____



Class/Project: _____
 Name: _____
 Phone: _____
 Email: _____

Comments: _____



Class/Project: _____
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Class/Project: _____
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 Phone: _____
 Email: _____

Comments: _____

Project Plan

Plan your project before you start

NAME: _____

PROJECT: _____ DATE: _____

TIME How long will your project take? Can you complete it in time?

DIFFICULTY Do you have the skills needed to complete your project choice?
How much help will you need?

FUSE TACK FUSE

CONTOUR FUSE

FULL FUSE

WHAT SHAPE What shape is your project?
Round, square, octagon, oval, something else?

SLUMP or DRAPE SLUMP DRAPE

Which face of the glass do you want outside?
Texture inside? Texture outside?

MOLD Choose the mold you plan to use before starting your project.
Be sure the right size and shape of mold is available.

HOW THICK Each layer of glass is 1/8 inch (3mm) thick

GLASS Decide what colours you will be using before starting.
Check to be sure what you want is available.

OTHER MATERIAL What other materials will you need to complete your project?
Are they available?

COMMENTS.



Questions for weeklong intensive class

Thanks for enrolling in our weeklong glass art intensive (glass art anarchy) class.

This class is intended in part to help expand your personal skills but equally to give you a chance to try out things you've never had a chance to but always wanted to. We can't promise we will be able to do everything you want, but we can promise to do our best for you.

Because this is a non-structured free style class, we don't have a set program or order for different techniques but will set up what is needed when requested. It will help us a lot to get ready for you if you give us some ideas of what you most hope to get from your experience with us by telling us what is most important to you and equally to help us plan the order of projects that will help to have all the projects completed while you're here. That's especially important if some projects require multiple kiln firings.

1. Very important – would hate to miss out.
2. Important and hope to get to try out.
3. Not especially important but would be fun.

	1	2	3
	Most Important	Important	Least Important
Casting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coldworking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Combing Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Embossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Freeze & Fuse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fusing & Slumping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mica Magic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mold Making	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pebbles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sandblasting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Screen Melts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stained Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torchworking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vitrigraph	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weaving Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other:.....

Sample Class Descriptions

When you advertise your classes, you want to provide a clear description of what all the class includes so students know what to expect. It's often a balancing act between keeping it brief and to the point but not so brief you leave out something important or fail to clearly describe what all the class covers. Sometimes, to avoid confusion, you will want to take special care to avoid any miscommunication or misunderstanding by even mentioning something it does NOT include.

Here are some examples of Class Description I use for my classes”

Weaving Glass

Yes, you can weave glass. This class will teach you how to mold glass strips to be used to create woven glass in a variety of designs from simple linen patterns to intricate multi-level tartans. You will work with stainless steel molds specially designed for creating serpentine strips to weave glass. Instructions will include what is needed to slump and drape different makes of glass in the small spans used to create components for weaving and how to assemble those components into a finished weave. You will learn how to create different shaped projects including round bowls and several different ways to make your own molds for glass weaving project. In the class you will make the serpentine strips for a 6” x 12” projects and be given the glass to install the cross weave pieces at home to complete the project.

Mica Magic

Learn how to use rubber or vinyl stamps (the kind used for scrapbooking) to fuse elaborate multi-colored multi-layered designs onto glass with mica and how to sift on and brush on mica to create a metallic rainbow of intricately detailed designs and scenes on glass. Not all mica will retain color at fuse firing temperatures. Learn how different colors of mica respond to heat at different temperatures. Class will include making several jewelry cabochons and either a 6” stamped or fossil vitrae project. It will also include demonstration of numerous ways mica can be added to a fuse project to make it sparkle. If you have any scrapbooking stamps, bring them to the class.

Sample Class Descriptions

Screen Melts

Create spectacular glass art from your scraps. Learn how the swirling molten glass creates incredibly intricate patterns. This class will teach you how to control dimension and size, how different colors react in a melt, and how to work with different COE glass in melts. The size of melts you can do is restricted only by the size of your kiln. You can use them to create amazing trays and bowls or to be cut up as cabochons for jewelry. The stainless steel screen melt systems specially designed for kiln melting glass will allow you to create dramatically more elaborate designs than are possible with shelf or pot melts. In this class you will make a small screen melt to take home to slump and drape.

Students bring: cutting and breaking tools

Mold Making for Glass Art

Unhappy paying big buck to buy molds? Can't find a mold for what you want to make? This class will teach you how make your own molds for just a few dollars from any found object or from anything you can fabricate. You will learn how to work with a variety of materials including latex, silicon, hydrocal, plaster, silica/plaster investment and ceramic slip.

Whether you want to just make a quick and cheap mold for a one time project or a commercial quality ceramic mold to reuse 100 times. Whether it's for draping or slumping, for an open-faced casting from scrap glass in your kiln or finely detailed freeze and fuse castings with glass powder. This class covers it all.

You will make several molds to take home. If you have a small object (6 inch or smaller) you want to make a mold from, bring it to the class. An assortment of objects to make molds from will be available for you to experiment with.

Screen Melts

Introduction

There are two terrific reasons for melting glass through screens. First because screen melts produce uniquely intricate patterns not possible any other way and second because it does it using scraps or discards from failed projects. You use scrap to make art.

Selecting Screen Material

Stainless steel. Only stainless steel. Don't even consider anything else. Carbon steel can't be trusted to not soften and anything galvanized will produce noxious fumes that will permanently contaminate both the glass and the kiln bricks. NEVER EVER fire galvanized metal in your kiln.

The smaller the mesh size, the more intricate a pattern will be formed as the glass melts. However, the thick viscosity of glass limits how small a hole glass will melt through. Trying to melt through mesh with holes smaller than 1/4" will leave most of the glass on the top of the screen with lots of glass stalagmites standing up on your kiln shelf and even more glass stalactites dripping down through the screen. Pretty, but not especially useful.

When selecting how thick the mesh is, remember that just as glass softens when it's heated, so does metal. A screen that can easily hold the load of glass at room temperature might soften and bend during firing. Opening the kiln and finding your screen folded like a taco shell melted inside the glass can be pretty disappointing. Use a screen with heavy enough gauge to resist sagging.

Using some kind of extra support along the edges of the screen will make a huge difference in preventing the screen from sagging. It can be heavy metal wire or bars, a metal ring or mold, strips of ceramic, kiln posts, or vermiculite board. Anything that will carry the glass without

sagging and can stand up to the temperatures needed to melt glass.

Low grade stainless steel will spall more and soften more than high grade. Higher grade metal can also be used more times than lower grade. Problem is, the higher the grade, the higher the cost. Everybody has to choose their own compromise between cost and quality depending on how many times they expect to reuse the screen.

Prefire Before Using

You should kiln fire your screen melt before using it to remove any residual oil or contaminants left from production. Fire it to at least 1000°F (515C) then allow it to cool. If you remove it from the kiln too early, remember that your kiln thermocouple reads air temperature. The metal will be much hotter. Wear gloves.

Spalling

Spalling is little bits of metal that flakes off metal after being heated. It looks like metallic dandruff. You'll get a lot of it on the first firing and small amounts with each firing. Don't worry, this happens as the metal cools and after the glass has solidified. It isn't stuck in the glass and just brushes off.

Kiln Shelf

Because screen melts are firing much hotter and much longer than is usual for full fuse firings, the possibility of glass sticking to kiln shelves or molds is much greater. Ceramic fiber paper is exceptional as a base to melt on but will leave a quite rough texture on the underside of the melt that will take considerable grinding to remove. "Thinfire" type kiln paper should NEVER be

Screen Melts

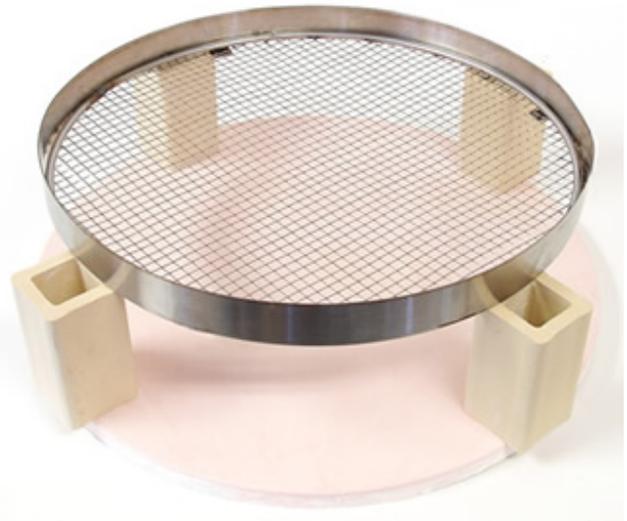
used. The dripping glass is moving on the shelf and will tear the paper leaving bits of it permanently embedded inside the finished melt. Most glass artisans prefer kiln wash. It will often stick to the underside of the melt but can be easily scrubbed off with a wire brush or sanded off (silicone carbide or diamonds) Rubbing a little vinegar onto stuck kiln wash helps break it down and make it easier to remove. Opal glass is a lot more likely to stick than transparent glass.

Selecting Molds

You can melt directly onto your kiln shelf, or, if you want to control the shape and size of your melt, into a mold. It can be metal, clay, or vermiculite or ceramic fiber board. Melting into a drop ring works well. Melting into a clay saucer (like used for flower pots) or a shallow ceramic tray will work but clay or ceramic can't always be trusted to not crack during the high temperature melt. Best is stainless steel.



Screen melt "System" with steel legs holding screen melt and supporting frame elevated over steel containment mold to melt glass into.



Screen mesh with support ring on kiln posts.

Preparing the Molds

If you're using clay or ceramic, you can coat it with kiln wash to prevent the glass from sticking but because glass kiln wash wasn't intended for the higher temperatures used for melts, you will get considerable kiln wash stuck to the glass. **DO NOT** use "thinfire" type kiln paper. It will tear and embed in the molten glass. **DO NOT** use Boron Nitride. It **DOES NOT WORK** at melt temperatures.

The ideal mold material is stainless steel. You have to use something to prevent the metal from sticking to the glass. Do not use kiln wash. The metal mold contracts quicker than the glass and will seal so tightly against the glass you'll have to break the glass to get the mold off. The ideal material is ceramic fiber paper. It will prevent the glass from sticking to the mold and provide enough soft cushion to easily allow the glass to release from the mold.

Screen Melts



Square steel mold lined with ceramic fiber paper.

Glass Selection

Minimize use of dark colors (especially black) that will overpower other colors. Use about half as much dark as you think will look right and twice as much light or clear. Using a lot of clear in your melt will allow you to more easily see the fascinating patterns formed inside the melt.

Avoid using too many large pieces. Small pieces or long thin strips produce a more interesting pattern than large pieces. Melts look the most attractive when there is a delicate mix of colors.

Measuring Glass Volume

You can predetermine what size your melt will be by the weight of the glass you put on the screen to be melted:

- 8 in. diameter use 800 grams (30 oz)
- 12 in. diameter use 1500 grams (55 oz)
- 8 in. square use 900 grams (35 oz)
- 12 in. square use 1600 grams (60 oz)

Remember not all of the glass will melt through the screen. Some will be left stuck on the screen. Use a little extra glass to allow for this.

But if you're melting into a mold, it's important to be sure you use enough glass to fully fill the mold but if you use more than is needed to fill the mold, all that will happen is you'll get a melt thicker than 1/4" (6mm). Firing it again to full fuse temperature will bring it down to that thickness (but also spread it out).

Loading the Screen

It's important to carefully stack the glass on the screen to get enough on unless you are using a pretty large screen and only doing a small melt. If you just pile it up, a lot of it will just slide off the edge of the screen and make a big mess with much of it falling where you don't want it to. If you drip molten glass onto the edge of your mold, you may not be able to get it off after.



Screen melt and supporting ring standing on steel rod support bars standing on kiln posts.

Screen Melts

Firing Screen Melt *

SEGMENT (min)	RAMP	TEMP	HOLD
1	800F (425C)	1600F (870C)	90
2	FULL	1475F (800C)	30
3	FULL	960F (515C)	60
4	200F (95C)	750F (400C)	0
5	300F (150C)	300F (150C)	0

You will have to take the glass up to 1600F to be hot enough to fully melt and hold long enough to drip through the screen. The hold at 1460F full fuse temperature is to help remove glass from the screen.

Slumping Screen Melt *

SEGMENT (min)	RAMP	TEMP	HOLD
1	200F (95C)	1000F (515C)	20
2	800F (425C)	1250F (675C)	20
3	FULL	960F (515C)	60
4	300F (150C)	300F (150C)	0

This firing schedule applies for a 12" or smaller melt. For larger melts, install a bubble squeeze between segments 1 & 2.

- **Firing schedules are for COE 96 glass. If you use COE 90, add 25F to all temperatures.**

Firing Screen Melt 2nd Firing *

SEGMENT (min)	RAMP	TEMP	HOLD
1	200F (95C)	1000F (515C)	20
2	800F (425C)	1475F (800C)	30
3	FULL	960F (515C)	60
4	300F (150C)	300F (150C)	0

You will have a few pits and spikes in the melt and rough edges from where the glass contacted the mold. Grind off the edges to create a uniform edge.

Fire to full fuse temperature with a long hold to remove the spikes and pits and fire polish the edge.

This firing schedule applies for a 12" or smaller melt. For larger melts, install a bubble squeeze between segments 1 & 2.

Reusing the Screen

Not all the glass will melt through the screen. Some will be left stuck in the mesh. To reuse your screen for more firings, you can either just use it as it is and let the residue from the previous firing join in the new firings or you can break out the residual glass by smashing the screen with a hammer. Don't smash it too hard or you'll damage the metal mesh. Just hard enough to break out the glass. Be patient. It takes a few minutes to break it all out.

Instead of cleaning out their screens to reuse them, many glass artisans have opted to have multiple screens for various color themes so they don't need to be concerned about color contamination in different melts.

Screen Melts



Screen loaded with scrap from failed projects.



Screen after melting into round mold.



Some Screen Melts



Class Outline - Coldworking Glass

Collect	Release form, class fee
Handout	Handout student package including Evaluation Form.
Introduction	Personal intro and brief history of coldworking.
Explain	What all class will cover. Importance of coldworking.
Safety	Risk factors. Protection.
Different Glass	Different thickness, different COE.
Manual	VIDEO coldworking.without tools
Glass Saws	VIDEO different glass saws
Dry Belt Sander	VIDEO using a dry sander
Wet Belt Sander	VIDEO using a wet sander
Vibrating Lap	VIDEO using a vibrating grit lap
Rociprolap	VIDEO using a rociprolap
Diamond Lap	VIDEO using a diamond disc lap
Handheld Lap	VIDEO using a handheld lap
Diamond A & D	Advantages and disadvantage to working with diamonds
Sandblasting	VIDEO sandblasting techniques
Drilling	VIDEO drilling glass
Glueing	VIDEO different way to glue glass
Fire Polish	Explain "Commando Raid" fire polish kiln schedule
DIM Stuff	"Did It Myself" WBS, lap, hand grinder, etc.

Glass Fossil Outline

Preview

Aka fossil vitrae
Plant material burns off.
Fresh or dry
Leaves texture – consider for finished project.

Preparation

Material – can be any plant material
Press - better to press before but not essential
Avoid thick parts – can trap air.
DEMO – show how material pressed on paper towels
Powder – can use glass powder, enamels or mica.
DEMO – how to sift powder onto plant material
Ghost – a ghost image of the material will apply on the glass if no powder added.
DEMO – sample of glass project with ghost image.

Design

Select – select material and set out design on kiln paper.

Image Issues

Keep powder application crisp to avoid blurred image.

Application – keep crisp – avoid spillage

Hairspray - apply hair spray – move – apply powder – set on kiln paper.

Glue Pad - press into glue pad – flip and move – apply powder – set on kiln paper.

CMC - spread CMC on glass and repeat as for glue pad

Water - wet a sponge and use same as glue pad.

Nothing - just set out the foliage and fire with nothing on it for ghost image.

Fusing

Single layer tack fuse or double lay full fuse.
DEMO sample of comparison projects.

Drape or Slump

DEMO examples bowls, sconces, trays and vases

Variables

Different glass – can be done on clear glass or any colour.
Especially attractive on black.
Float Glass – enamels and mica are compatible with float

Time Schedule – Glass Art Sampler

In classes that cover a variety of techniques and multiple projects, it can be especially important to plan a schedule for when each instruction or demonstration and each project is done. This is the schedule we use for a Glass Art Sampler class that runs from 9:00 am to 5:00 pm and covers a variety of different glass art techniques.

		<u>Time required</u>	<u>Time Complete</u>
Introduction		15	
Stained Glass	Sample demo	15	
	Discussion	15	
Cutting	VIDEO	10	
	Discussion	10	
Cutting	PRACTICE	25	10:30
	BREAK	20	10:50
Fusing	Demo Samples	10	
	Discuss technical	10	
	Show Photos	30	
	PROJECTS - 2	40	12:30
	LUNCH	60	1:30
Casting	Videos & Photos		
Mica			
Vitrigraph			
Pebbles			
Mold Making		60	2:30
Embossing	Photos& discuss	20	
	PROJECT	20	3:10
	BREAK	20	3:30
Sandblasting	Videos & Discuss	15	
	Photos & discuss	15	
	PROJECTS - 2	30	4:30
Torchwork	Discussion & Demo	10	
	PROJECTS	30	5:10
	COMPLETE		5:00

DVD Menu

An example of the menu on our Weaving Glass DVD

Weaving DVD Video Titles & Times

1. Weaving – Metal Molds 5:06
2. Weaving – Ceramic Molds 7:39
3. Weaving – Float Glass 3:43
4. Weaving – Plaster Molds 4:54
5. Weaving – Clay Molds 0:55
6. Weaving – Circle Molds 4:28
7. Weaving – Circle Spokes Weave 2:02
8. Weaving – Irish Weave 3:08

TOTAL: 32:00

Tutorials

Weaving Glass
Technical Diagrams

Photos - Hi Resolution JPG photos

Photo Explanation - An explanation of how different projects were created.

Markow & Norris - Examples of unique work by glass weaving masters.

www.glasscampus.com www.vicartglass.com

Basic Firing Schedules – COE 96

Tack Fuse – 3 mm + components

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	800	1350	15
3	9999	960	60
4	400	300	0

Slump – 3 & 6 mm

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	800	1250	20
3	9999	960	60
4	400	300	0

Full Fuse – 6 mm thick

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	800	1450	20
3	9999	960	60
4	400	300	0

Drape – 3 mm

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	800	1200	20
3	9999	960	60
4	400	300	0

Full fuse – 9 mm thick

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	300	1000	20
2	800	1450	20
3	9999	960	60
4	200	800	0
5	400	300	0

Drape – 6 mm

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	800	1200	15
3	9999	960	60
4	400	300	0

Full fuse – w/Bubble Squeeze

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	300	1000	20
2	200	1200	10
3	800	1450	20
4	9999	960	60
5	400	300	0

Fire polish – 6 mm

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	0
2	9999	1300	4
3	9999	960	60
4	400	300	0

Basic Firing Schedules – COE 96

Pebbles

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	600	1450	25
2	9999	960	30
3	600	600	0

Drop Ring – 6 mm

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	600	1200	observe
3	9999	960	60
4	400	300	0

Jewelry Cabochons

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	500	1000	10
2	800	1450	20
3	9999	960	30
4	500	600	0

Small Casting – in ceramic molds

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	9999	1450	20
2	9999	960	60
3	400	300	0

Weave Strips

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	400	1000	20
2	800	1350	30
3	9999	960	60
4	400	300	0

Larger Castings

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	500	1450	25
2	9999	960	90
3	400	300	0

Weave Assembly

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	300	1000	20
2	800	1350	15
3	9999	960	60
4	300	300	0

Screen Melt

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	500	1600	90
2	9999	1450	60
3	9999	960	90
4	300	300	0

Weave Assembly Slump

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	300	1000	20
2	800	1250	20
3	9999	960	60
4	300	300	0

Combing

SEG	RAMP °/hr	TEMP °F	HOLD minutes
1	9999	1700	60
2	9999	960	60
3	200	800	0
4	400	300	0

Kiln Firing Plan

If you're conducting a mix of classes each with a number of students, you will be doing numerous kiln firings. It's a good idea to plan a schedule for firing the projects. Here's the schedule I used for teaching a series of classes at Las Vegas GlassCraft Expo.

6 kilns each 14.5" x 14.5" inside dimension

Wednesday

WEAVE	12 projects @ 2/kiln = 6 kilns	Fire 6 at noon	6 loads
SCREEN MELT	20 projects @ 4/kiln = 4 kilns	Fire 6 at midnight	6
SAMPLER	12 Tack @ 9/kiln = 2 kilns	Fire 9 tack am THU	1
	12 Emboss @9/kiln	Fire 9 emboss early THU	1
	12 Full @ 4/kiln =	Fire 12 full am TH	3

Thursday

SAMPLER	12 tack @9/kiln = 6 kiln	Fire 15 tack late TH	2
	12 emboss @9	Fire 15 emboss late TH	2
	12 full @ 4	Fire 4 full late TH	1

Friday

JEWELRY	6 kilns	Fire 12 full early FR	6
SCULPTURE	16 projects @ 4/kiln	Fire 20 Mold late FR	5

TOTAL 33 loads

Glass Art Anarchy

A weeklong intensive class

**\$800.00 includes all materials and buffet lunch each day.
9:30 to 4:30 Monday – Thursday**

A free style glass class offering you a chance to experiment with a variety of glass art techniques and take home a load of finished projects. It makes no difference if you're brand new to glass art and come to launch your learning experience or you have years of experience and want to try out some of the more unusual advanced techniques possible with glass.

It's **GLASS ART ANARCHY**. No rules. No restrictions. Whatever you want to try. We'll do our best to show you how it's done. We have a gallery showroom idea center loaded with examples of projects incorporating some unique glass art techniques to help fuel your creative imagination. These weeklong classes are designed to be an intensive learning saturation experience.

Some of the things you can try:

- Casting Glass
- Coldworking glass
- Combing Glass
- Emboss/Sculpting Glass
- Freeze & Fuse
- Fusing & Slumping
- Mica Magic
- Mold Making
- Pebbles
- Sandblasting
- Screen Melts
- Stained Glass
- Torchworking
- Vitrigraph
- Weaving Glass

Glass Art Playtime

Come in to experiment and exercise your inner artist. No experience needed. All the bits and pieces are here to pick from to create your own personal glass art project. You build your creation from our collection of supplies and we'll fire it in the kiln to produce the finished art project for you to pick up later. Come on your own or bring friends and family for a group event.

Pick a Project

Wind Chimes	Make the components to take home after to assemble
Glass Fish	Make 3 Glass Fish suncatchers
Glass Garden	8 in x 8 in Glass Garden for tray or sconce
Christmas Ornaments	Make 10 assorted tree ornaments
Glass Fossil	8 in x 8 in Glass Fossil tray, sconce or vase
Pebble Play	8 in x 8 in pebble decorated tray, sconce or vase
Embossed	8 in x 8 in embossed glass panel
Fused	8 in x 8 in fused glass project for a tray, vase or bowl
Float	8 in x 8 in or 8 in round float mosaic or tempered chips

Glass Fossils Instructions

Instructions for creating a glass fossil project.

Materials Needed

Ceramic fiber paper or kiln paper base.
Glass powder or mica powder
Plant material – dried or fresh.
Hair spray
Several sheets of scrap paper

Design

Select the plant material you want and arrange your design on a piece of paper. Draw a layout on the paper if you want. Pencil or pen lines will burn off in the kiln.

Application

- Set one element of plant material on a piece of paper and spray with hair spray.
- Do NOT apply powder or mica until transferred to other paper.
- Transfer to another piece of paper.
- Sift on glass powder or mica
- Transfer the plant element to the base kiln paper or fiber paper.
- Return residual mica or glass powder to original jar.
- Continue until design complete.

Kiln Firing

Glass will be placed on top of your floral arrangement and fired in the kiln.

- A single layer of 3mm thick if to be fired to tack fuse.
- A double layer of 3mm if to be fired to full fuse.
- Or, a single layer of 6mm thick to be fired to full fuse.

Glass

This can be done with either art glass or float glass and either clear or coloured glass. If using float glass, it is advised to restrict to single layer glass.

Instructor Kit – Christmas Ornaments

Materials for students to select from:

Precut components for students to choose from in addition to the material supplied in the Student Kit.

Includes:

- components for snowman hats
- bits of black stringer for snowman mouth
- orange chips for snowman nose
- assorted stringer and vitriswirls
- assorted size and colour pebbles
- variety of glass frit and powder
- assorted colours of mica



Open Studio Poster

OPEN STUDIO

\$20.00

Drop in and use our space, tools and equipment to make a project. Anything you want to try.

HOURS 9:00 am – 5:00 pm Monday – Friday
 10:00 am – 5:00 pm Saturdays
 Sunday & Holidays by special appointment

CHECK AHEAD – Most of our classes are evenings but we sometimes have school groups or team building classes during the day and won't have space for drop in. Please check ahead before just dropping in.

ASSISTANCE – Drop In is not a class but whether you're a new beginner or a seasoned professional, our skilled artisans are available to help you with your projects.

TOOLS - You can bring your own if you have them or you can use ours. We bought all the toys and encourage you to experiment with different tools and equipment.

MATERIALS - You can bring your own or buy what you need from our stock. We also have a large collection of pebbles, vitriswirls, mica, frit and scraps to play with.

STORAGE - Secure storage is available if you want to leave your supplies or tools here.

DESIGN - Design your own or bring in your ideas and we'll help you produce a pattern for you to work from

EQUIPMENT RENTAL

GLASS KILNS	13" round shelf	\$10.00 per firing
	13" square shelf	\$10.00 per firing
	26" round shelf	\$20.00 per firing
	23" square shelf	\$30.00 per firing
POTTERY KILN	17" round inside	\$20.00 per firing
TORCH		\$10.00 per hour
WET BELT SANDER		\$20.00 per hour - minimum \$5.00
SANDBLASTER		\$1.00 per minute - minimum \$5.00

Sales – Power Point Schedule

INTRODUCTION

ARTISAN PROFILES

2. Michelle Frost
3. Mel Munsen
4. Jo Ludwig
5. Peggy Brackett

PRICING

6. Price Psychology
7. Costing is Science/Pricing is Art
8. Pricing System Works
9. S.T.E.M
10. S.W.A.G

MARKETING

11. Where to Sell
12. Artist's Statement
13. Prospecting

WORKING IT

14. Artistic Isn't Enough
15. Rising Tide – JFK
16. Play Fair
17. Entrepreneur's Business Plan
18. Hazards
19. Product/Price/Place

ATTITUDE

20. Talk to Yourself – Ask?
21. How to Fail
22. Good at Business – Warhol

MOTIVATION

23. Maslowe's Hierarchy of Needs
24. Positivity Pays
25. Pessimism/Optimism
26. Pessimism quote – Churchill
27. Where Are You? What level?

INNOVATION

28. Imagination – Einstein
29. Creativity – John Cleese
30. Creativity quote – Picasso
31. Innovation – Steve Jobs

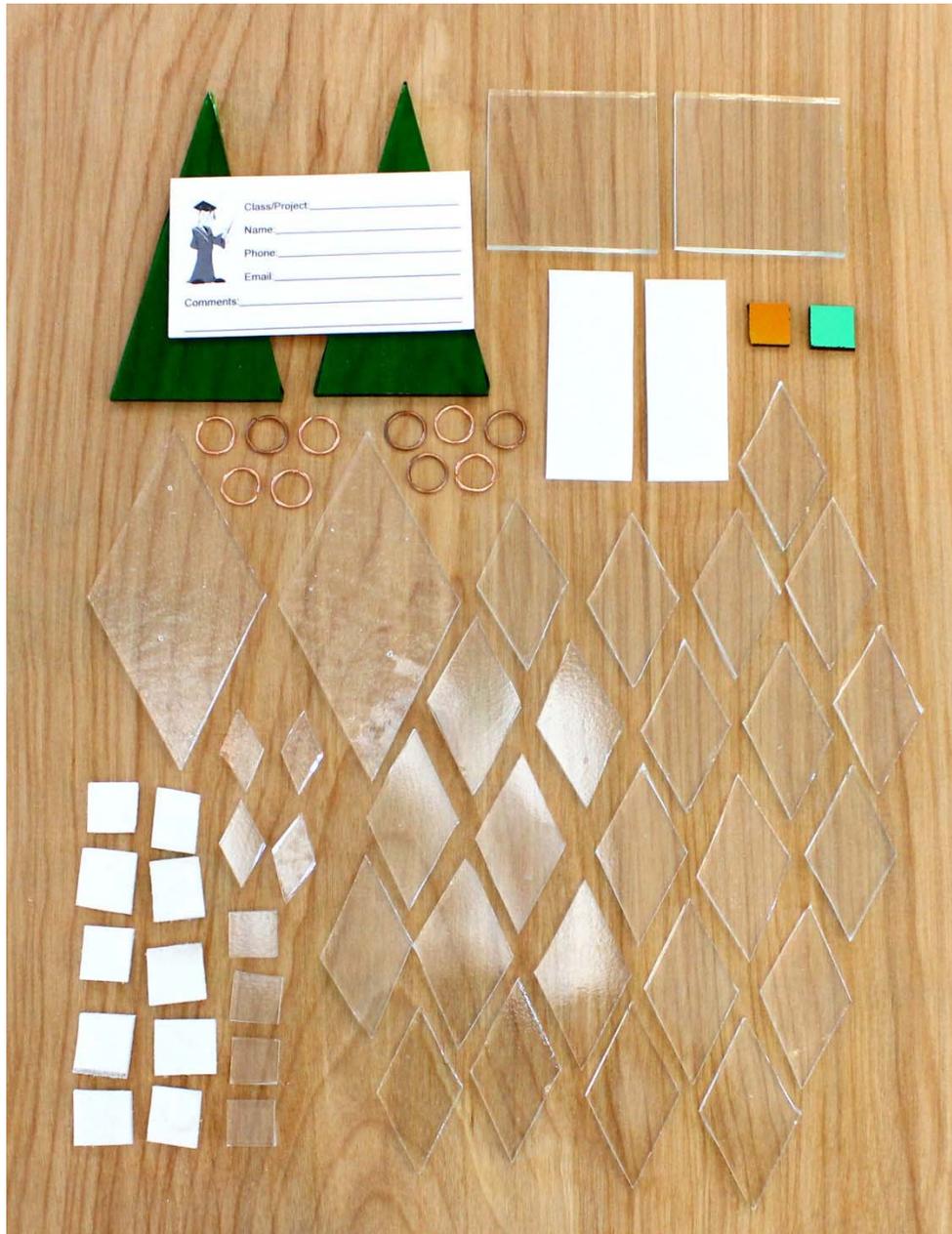
PERSISTENCE

32. Persistence quote – Ben Fanklin
33. Persistence quote – J. Andrews
34. Behold the Turtoise
35. Failure – Thomas Edison
36. Failure – JK Rowling
37. Failure – Bill Gates
38. Failure to Try – Dennis Brady
39. Success One More – Nap. Hill
40. Goldilocks Syndrome
41. What Matters Most?

Student Kit – Christmas Ornaments

Materials included to make 10 fused glass Christmas Ornaments.

2 trees, 2 snowmen, 2 squares, 2 large diamonds, 24 small triangles (for snowflakes).
10 pieces ceramic fiber paper, 10 copper wire rings, 4 – ½” clear squares, 4 – ½” clear diamonds, 2 – ½” square dichroic and a student project card.



Video Script – Tempered Glass Bowl

This is the script I used to produce a video making a bowl from chips of tempered glass. The blue colour text is the instructions for what to do and the black text the spoken dialogue during the video.

Introduction

Because it can't be cut, tempered glass can't be cut down into smaller pieces like regular window glass but it can be used to make beautiful fused glass bowls and trays. Clear window glass and tempered glass can't be trusted to be compatible to glass from different sheets but will always be compatible to itself – so you want to use only pieces of glass from the same original sheet.

Glass placed on the table and cleaned

Start by thoroughly cleaning both sides of the pieces of glass you plan to use. Lay a large towel or sheet on the table. You'll soon see why. Lay another towel or sheet on top of the glass.

Hit the middle of the glass with a hammer.

Tempered glass won't break this way.

Hit the corner of the glass with a sharp smack to break it.

This is how you break tempered glass.

Take the top cover off the glass to expose the broken sheet.

Now you see why a covering cloth is needed.

Pour the glass bits into a bucket

Pour the glass chips into a container being careful to not mix with any glass from any other sheet of glass.

Place the steel ring mold in the kiln.

You need some kind of mold to contain the glass bits. It can be any materials because you'll be removing it before turning the kiln on.

Pour the glass chips into the mold.

Pour out some glass bits and spread out to about ¼ inch thick.

Remove the mold and close the kiln lid.

Remove the mold and fire the kiln to tack fuse the pieces together.

Open the kiln and remove the project.

The tack fused project can now be slumped in a mold to make a bowl or tray.

Display finished project.

Webinar Schedule - Vitrigraph

Personal Introduction 2:00

Videos

1. Introduction to Vitrigraph 3:55

2. Setting Up the Kiln 2:55

3. Safety, Tool & Work Area 3:35

4. Vitrigraph Pot Variations 3:53

5. Different Glass 4:16

6. Vitrigraph Process 2:37

7. Loading the Pot 2:47

8. Rod Pour 6:51

9. Special Techniques 3:54

10. Birds Nest Bowl & Thatch 6:01

11. Diagrams – Pot Loading 3:26

12. Charts – Temperature – Hole 5:10

13. Power Point Photos 10:00

Interval Comments between videos 15:00

Extra Discussion & Closing Comments 5:00

Total Time 81:50

Class Drawers

I have sets of class Instructor Kits for different classes in marked drawers in our shop.



Each includes a class outline and a Teacher's Kit with all the tools and samples needed for the class. I keep each one prepared ready for each class but also available when a question is asked about a different subject relating to a different class. I can just pull out the drawer and everything I need is there

Idea Display Shelves

To show examples of different glass art techniques and to give students ideas for what they can do we have sample projects on display on shelves with explanatory cards.



**KILN LOAD
for 13" square shelf**

Materials Inventory

I make it a routine practice to maintain an inventory of class components always on hand for classes. They're set out in bins or trays for students to take whatever they want to use.



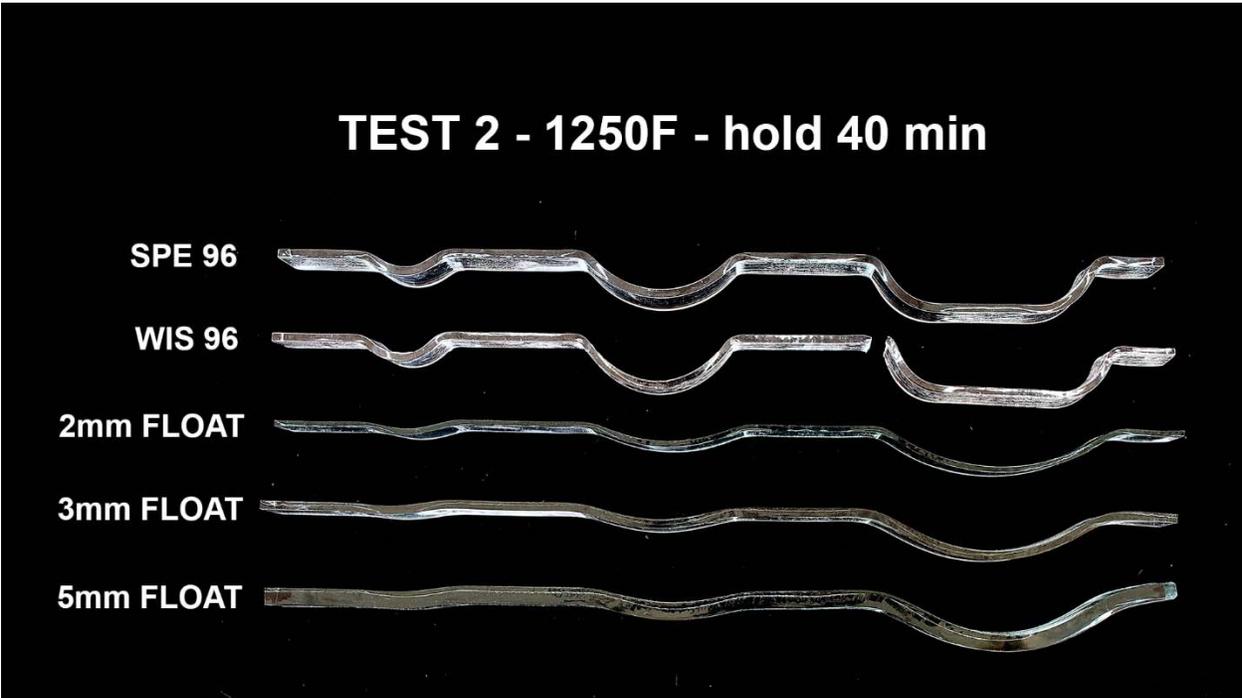
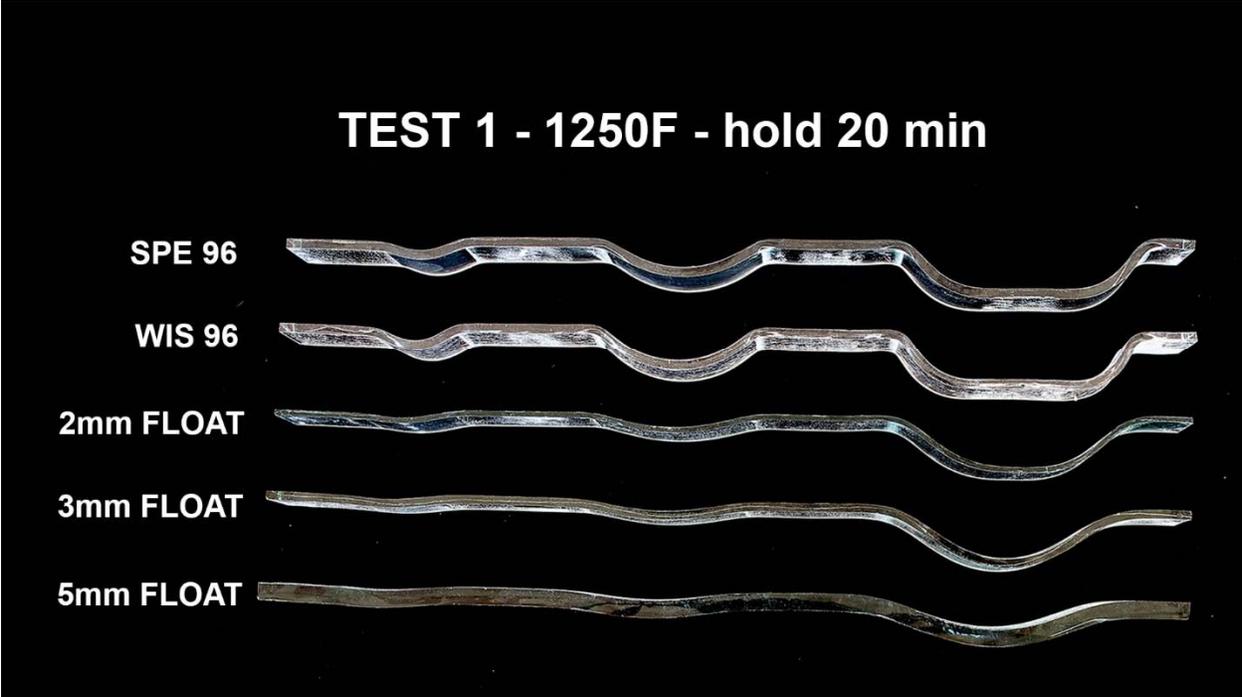
Project Board

To keep small student projects organized, I have drawn grids on pieces of cardboard with spaces for each project. Each student project is placed on the board with a Student Project Card. By taking care to record how the kiln is loaded relative to the Project Board, I can be sure each project is returned to the student that made that project. This board has grids 4.75 inch square to accommodate 4 inch square projects. I have a variety of such boards with different size grids for different size projects.



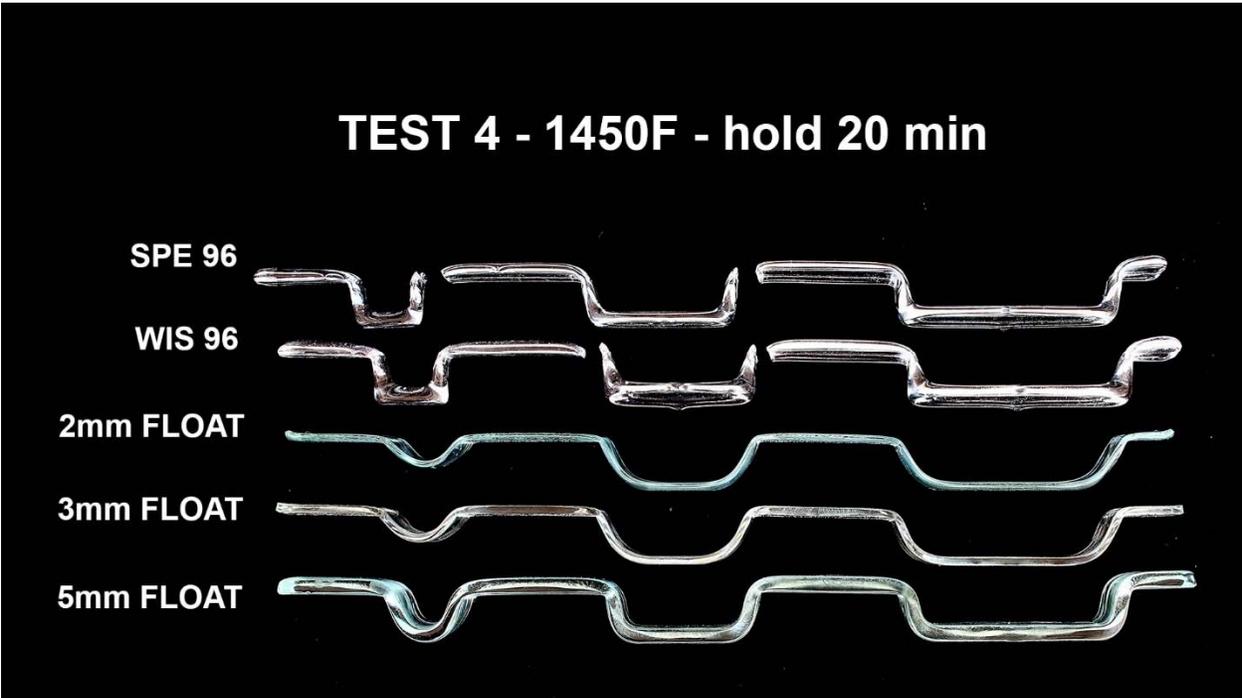
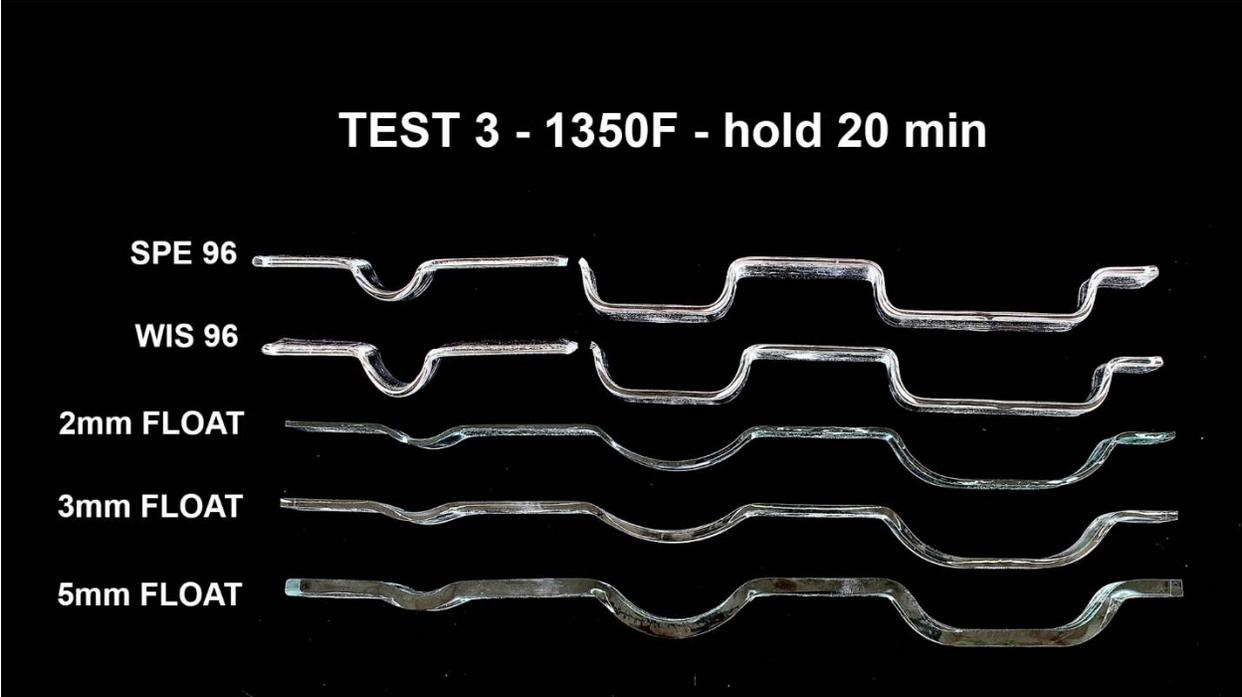
Slump Span Comparison – Test 1

Testing different thickness glass fired at different times and temperatures.



Slump Span Comparison – Test 2

Testing different thickness glass fired at different times and temperatures.



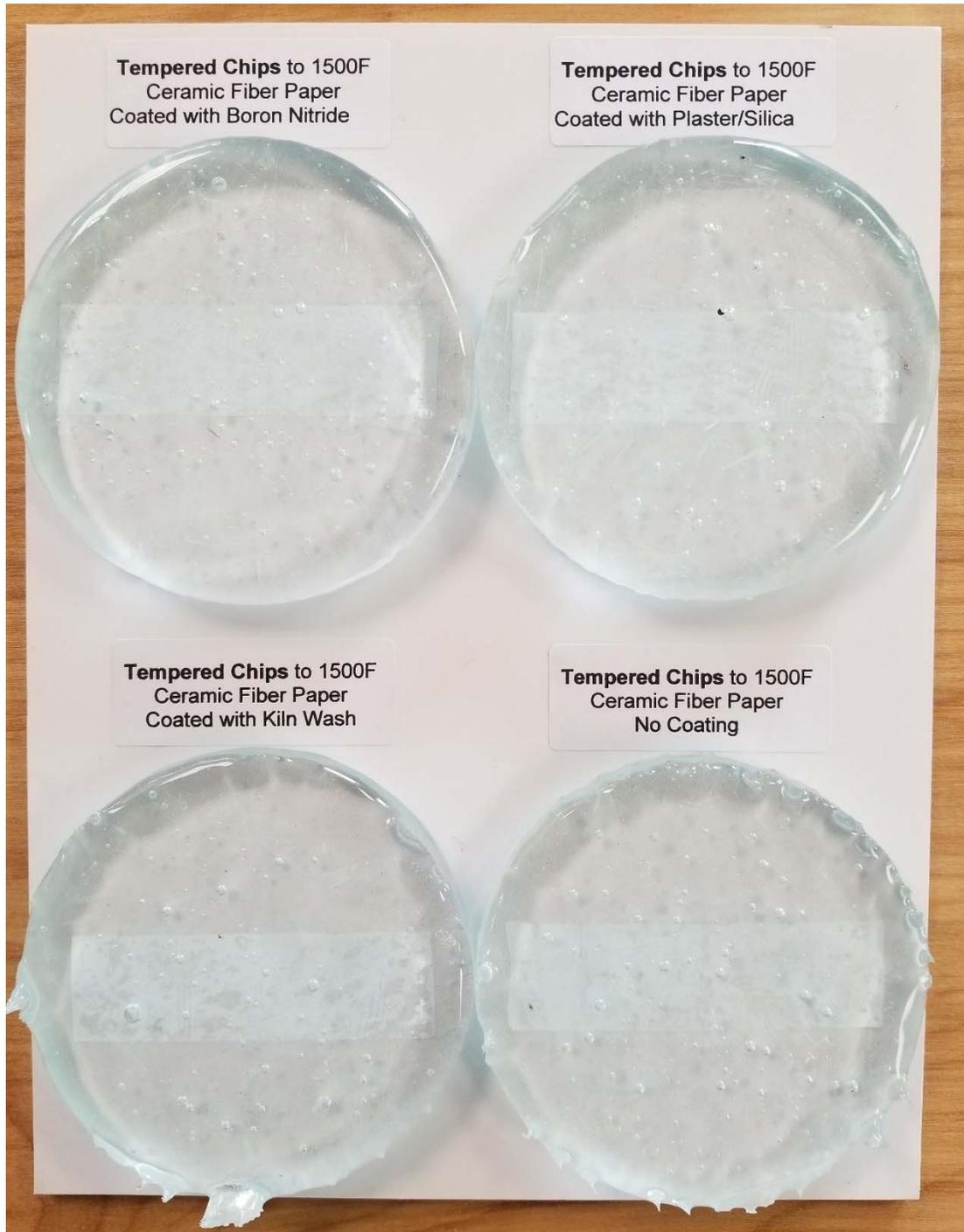
Tempered Chips – 1450F

Comparison firings of tempered glass chips fired in a 6 inch diameter steel mold lined with ceramic fiber paper with different coatings on the ceramic fiber paper.



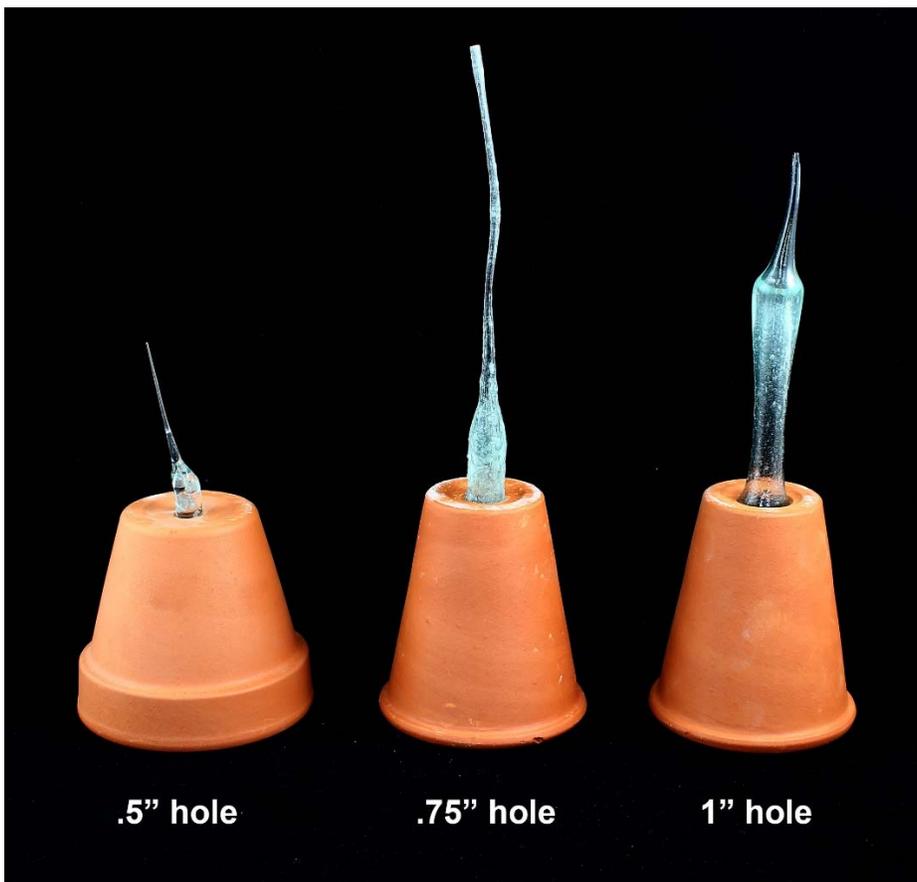
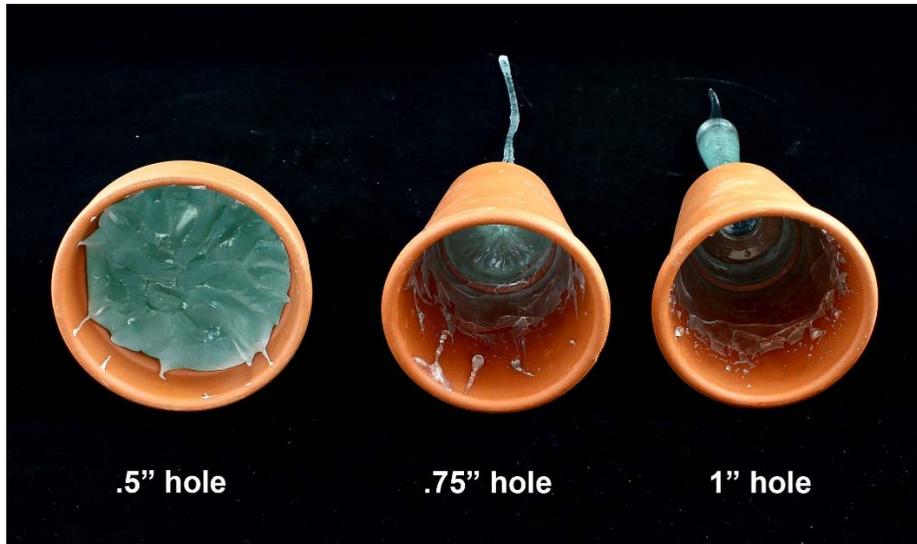
Tempered Chips – 1500F

Comparison firings of tempered glass chips fired in a 6 inch diameter steel mold lined with ceramic fiber paper with different coatings on the ceramic fiber paper.



Tempered Glass Vitrigraph

Tempered glass fired in a vitrigraph with different size pot holes.



Christmas Ornament Samples

Examples of Christmas ornaments that can be made from the Student Kit in the Christmas ornament class.



Dichroic Samples

We made up a display board of samples of all the CBS dichroic colours. On the left fused uncapped and on the right fused with clear cap.



Enamel Colour Samples

Glass enamels fired onto clear float glass.



Enamel Project Examples 1

4 in x 4 in tiles sandblasted than paint with mica and enamels.



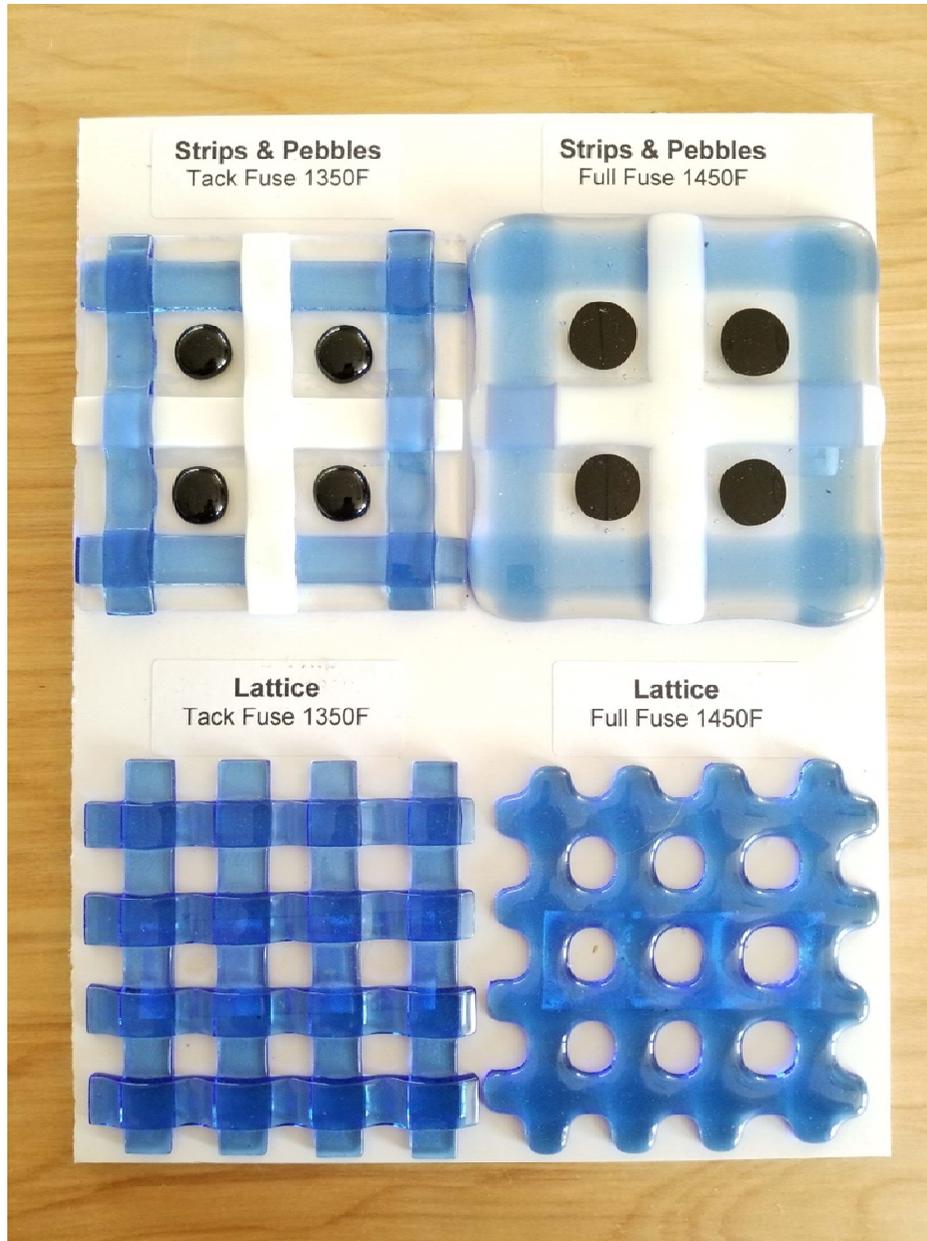
Enamel Project Examples 2

4 in x 4 in tiles sandblasted then paint with mica and enamels.



Fuse Comparison 1

Identical 4 inch x 4 inch projects fired to tack fuse and full fuse as a comparison.



Fuse Comparison 2

Identical 4 inch x 4 inch projects fired to tack fuse and full fuse as a comparison.



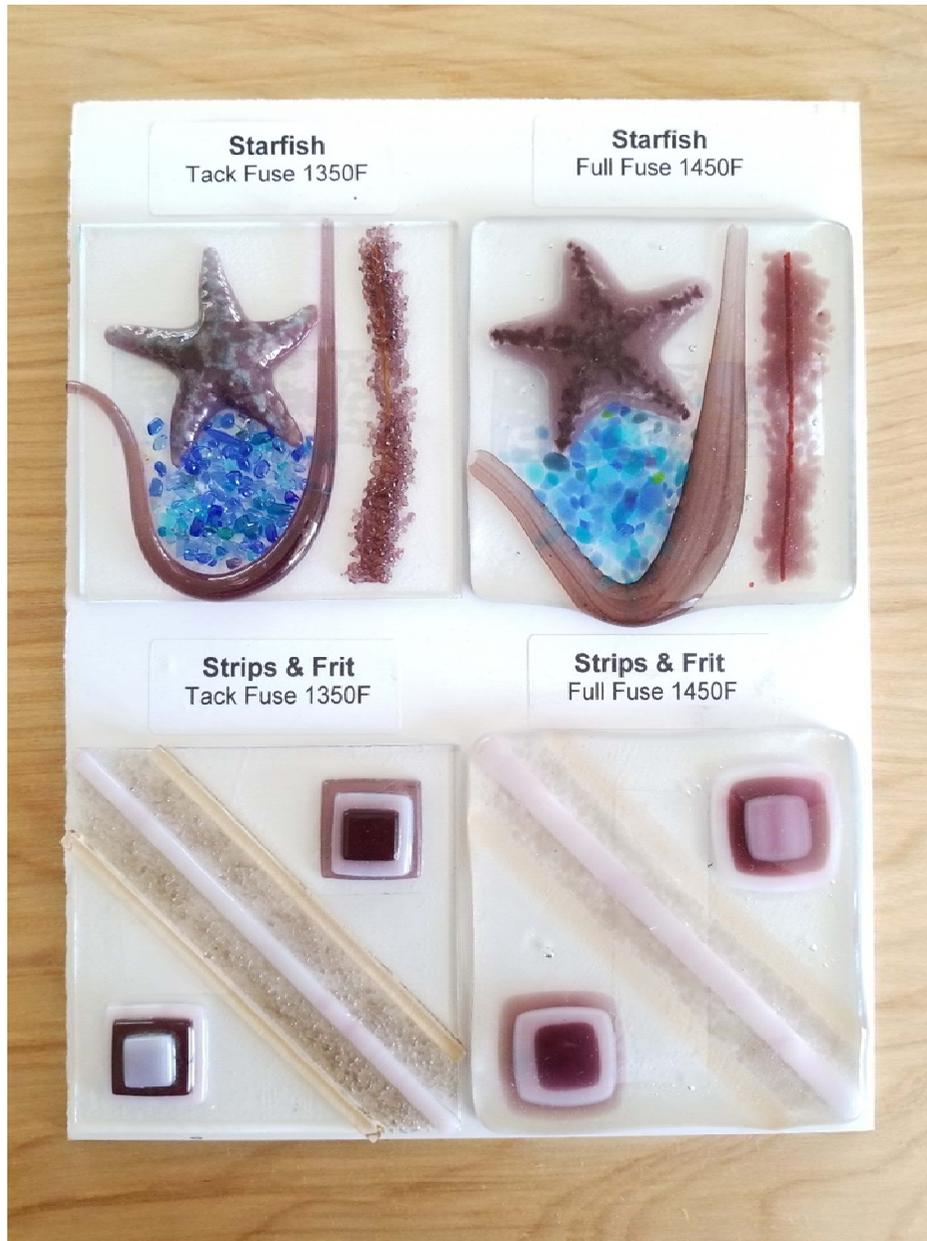
Fuse Comparison 3

Identical 4 inch x 4 inch projects fired to tack fuse and full fuse as a comparison.



Fuse Comparison 4

Identical 4 inch x 4 inch projects fired to tack fuse and full fuse as a comparison.



Glass Fossils – Tack Fuse

4 inch x 4 inch glass tiles with different adhesives comparing difference with plant material placed on kiln paper or ceramic fiber paper and fired to tack fuse.



Glass Fossils – Full Fuse

4 inch x 4 inch glass tiles with different adhesives comparing difference with plant material placed on kiln paper or ceramic fiber paper and fired to full fuse.



Mica Samples

A display board of the different fuse tested mica colours on white and on black glass. Left same fired uncapped. Right sample fired with clear glass cap.



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