Blowing the Glass Balloon

I always wanted to learn how to make glass.

I read books and watched videos about glass making, but that just made me want to try it myself even more.

One day last week I finally got the chance to visit a glass studio and learn about glass making.

The first and most important lesson in glass making is that some things in a glass studio are very, very hot. They are much hotter than anything in your house, even the oven.

You must be very careful not to touch anything that is hot or you will be badly burned.

Safety first!

Because some parts of a glass studio are so hot, you must do special things for protection.

To protect yourself, you must wear safety glasses and heavy leather work gloves.

To protect the glass studio from ambulance chasing lawyers, you must sign a liability release.

After I did all the things for protection it was time to begin my project.

I started by sticking a hollow stainless steel tube down into a cauldron of molten clear glass.

The cauldron was heated to over 3,200 degrees and the molten glass looked like thick, gooey, clear syrup.

We inserted the tube a few inches into the molten glass and rolled it slowly to wrap the gooey glass around the tube.

The molten glass wrapped around the hollow tube is called a gather.

The molten, gooey glass was red hot when it came out of the cauldron.

Then I pulled the tube wrapped with molten glass out and put it on a stand with ball bearings on top. The ball bearings made it easy to smoothly turn, or roll, the tube.

I rolled the tube slowly all the time during the entire project. If I stopped rolling the tube, even for a few seconds, the molten glass would drip off the end.

To have enough gooey glass for this project I needed two gathers.

I put the first gather on the stand and rolled it to let the glass cool a little bit. I let it cool down enough to do a second gather.

Once the first gather had cooled enough I went back to the cauldron for another load of molten glass. That was the second gather.

I put the tube back on the ball bearings and turned it slowly for a few minutes to let the glass cool down a little bit.

Now I had my hollow tube with two gathers.

It was a big blob of molten, gooey glass.

My blob of gooey glass was now big enough for my project.

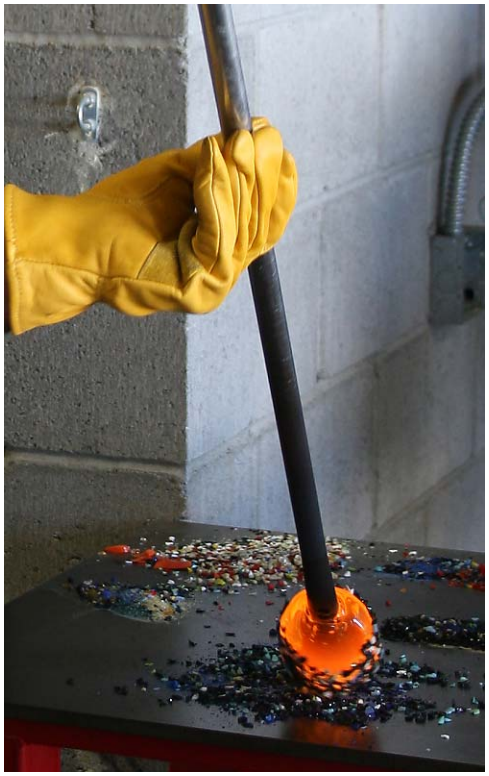
The next step was rolling the gooey glass in small pieces of colored glass laid out on a metal table.

The pieces of colored glass made the streaks, spots and stripes of color I wanted for my project.

I chose the ocean colors of light blue, dark blue, white and green.

I wanted ocean colors because when I made this project we were on the Oregon coast and spent a lot of time around the ocean, beaches and tide pools.

When I rolled the gooey glass in them the pieces of colored glass stuck to it.



Next, I put the gooey glass with the colored glass pieces stuck to it into a furnace called a “glory hole” to melt everything together.

All the time I slowly rolled the tube.

If I didn’t roll the tube the glass would drip off the end.

The glory hole furnace is less hot than the cauldron, but not by much. I hope it is the closest thing to looking directly into the gates of hell I will ever see.

Photo by Douglas Hackney

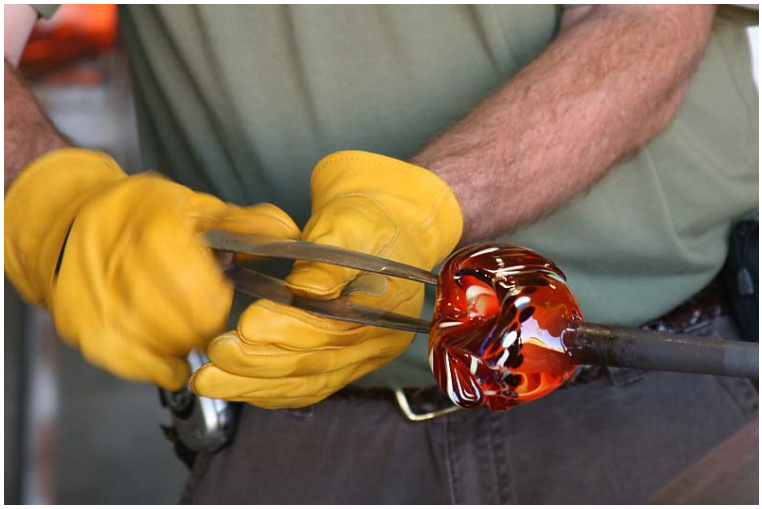
I kept the tube turning slowly and evenly the entire time the project was in the glory hole furnace.

After a few minutes the colored pieces of glass melted into the gather of clear glass.

Photo by Douglas Hackney

After I melted the colors into the clear glass I brought the project over to a work bench and used a big metal tweezers-like tool to twist the colors into the clear glass.

The glass was soft and gooey. It was easy to poke and twist the gooey glass.



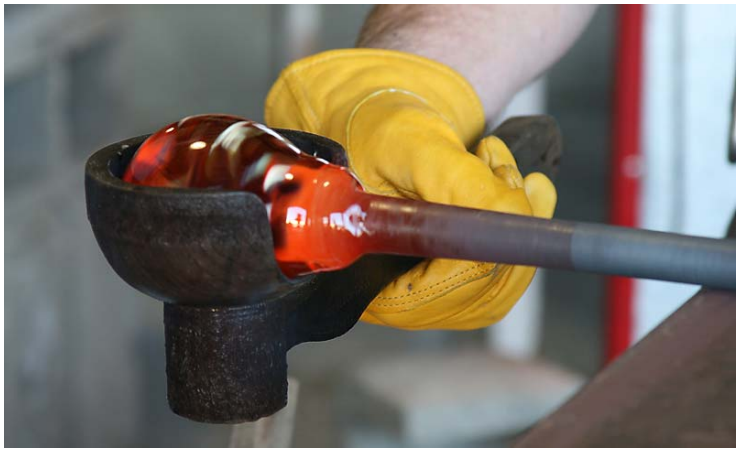
After I twisted the colors into the gather I heated the project back up again in the glory hole furnace.

Once the glass was heated up to red hot I took the project back to the work bench.

This time I used a wet cherry wood tool to form it into the shape I needed for the project.

For this project I needed a rounded shape so I used a wet cherry wood tool with a bowl on the end.

All the time I was at the work bench I slowly rolled the tube to give the red hot glass an even round shape of the wet cherry wood tool.



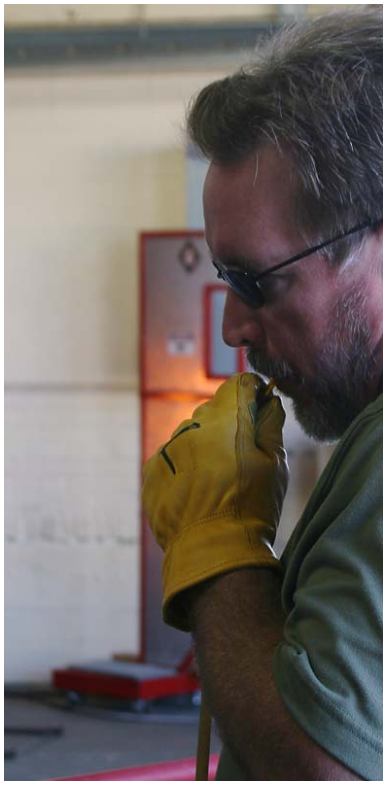
After using the cherry wood tool to make a rounded shape I put the project back into the glory hole furnace.

This time I needed to get everything red hot and soft enough for blowing.

When I got it red hot I took the project back to the bench.

Back on the work bench I held my thumb over the end of the hollow stainless steel tube. The air in the tube expanded from the heat and needed a place to go. The hot expanded air couldn't get out the end I had plugged with my thumb, so it forced its way out the other end of the tube and formed a small bubble in the middle of the red hot molten, gooey glass.

Once the bubble was formed I removed my thumb and attached a rubber hose to the end of the hollow stainless steel tube. I blew very gently into the end of the hose and the molten glass started to expand. While I was blowing softly I rolled the hollow tube a little faster.



While rolling the tube I blew softly. The glass expanded like a balloon.

The glass studio worker used large pincer tools to keep the glass balloon from expanding off the rotating tube.

Finally the glass balloon was as big as it could get without breaking.

This was the first time the glass had not been red hot.

At last I could see the colors appear as the glass cooled and turned clear.

Even though it had become clear, the glass was still very, very hot.

Now I was ready to break the hollow tube off of the glass balloon.

First we carried the tube with the glass balloon on the end over to the breaking stand. We picked up the tube and held it straight up and down with the glass balloon on the bottom. We set the glass balloon down on a special heatproof pad while we held up the tube.

I needed to break the hollow tube from the glass balloon. The glass studio worker told me to tap the tube above the glass balloon with a small wooden mallet to break it off.

This was a scary moment.

If I made a mistake now I could destroy the entire project.

The blow must be quick and sure.

I took a deep breath.

I got ready.

One quick, sharp tap and – success!

The glass balloon was free!

Now we needed to make a loop to hang the balloon. We took a small gather of molten clear glass and put it on top of the glass balloon where we broke off the hollow tube. Then we pulled the glass up to stretch it and cut it with big metal scissors called snips. Last, we used a set of giant tweezers to form it into a loop.

And presto! We had a beautiful glass balloon to hang.

The hot glass balloon went into a special chamber that cooled it slowly over 18 hours.

The next day the glass balloon would be cool enough to touch.

Customers can come back to the glass studio to get their projects the next day.

Or the glass studio can mail the project to your house.

I did not know what to do with the glass balloon I made.

It was much too fragile for us to take along with us while we travel. And we are traveling all the time so we do not have a house to mail it to.

Every minute I was making the glass balloon I was thinking, “What will I do with this glass balloon?”

Every project at the glass studio is marked with a letter of the alphabet while it is still soft and gooey. It is marked so the next day when the project is cool the glass studio workers will know which project was made by which customer.

The alphabet letter is how the glass studio workers know who will pick the projects up or which house they need to mail the projects to.

All day the staff gives each project its very own letter of the alphabet starting with A all the way to Z. Each alphabet letter is used only once per day.

The letter marked on my glass balloon was the letter N.

I said, “The letter N is for Nakeya.”

That letter N was the answer to my question, “What will I do with this glass balloon?”

The letter N told me where this glass balloon should go. I told the glass studio workers to mail the glass balloon I created to your house.

I hope it arrives safely and that when you look at it you think of the ocean and of your grandfather who loves you very much.

Unless otherwise noted, all photos by Stephanie Hackney

