

THE CRUCIBLE

magazine

ROSA AT THE WHEEL

The Crucible's
Ceramics
Department
launches wheel
throwing

MEET C'ZARRIAH

Youth student
trains the next
generation

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offerings
included inside



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ACKNOWLEDGMENTS

Thank you to our community of supporters who make our work possible.



*Welded Scorpion by Fuego
Youth Leader Edgar Salazar*



CLASSES FOR ALL AGES AND FAMILIES

With family classes for youth as young as age 5, a robust youth program for youth ages 8-18, and an adult program for all ages over 16—there is a class for you at The Crucible.



ABOUT THE CRUCIBLE

The Crucible is a nonprofit organization and art school making the fine and industrial arts accessible for everyone of all ages, backgrounds, and abilities. Our work is centered in Oakland and the East Bay, where we offer classes and team builds in glass, metal, clay, wood, and more to over 8,000 people each year.

From welding to glass blowing to woodworking to jewelry-making to fire dancing, classes are designed to bring together beginners and experienced artists and fabricators in a one-of-a-kind learning environment. We offer a low faculty-to-student ratio (often 1:6 or better) and a non-competitive, welcoming environment where people can learn and collaborate.

CLASSES FOR ALL INCOMES

As part of celebrating and empowering Oakland, we offer free programming, scholarships, and paid leadership opportunities for youth and adults who live locally and/or may not otherwise be able to access our studios.

Each year, The Crucible gives away over \$100,000 in scholarships and free programming to youth and adults, with priority for low-income households, people in West Oakland or the East Bay, and BIPOC (Black, Indigenous, and People of Color) youth and families.

CLASSES FOR EVERY SCHEDULE

Classes range from 3-hours to a 30 hour intensive, so you can decide how much time you want to devote to developing your artistic practice. The Crucible offers weeklongs, weekend intensives, and weekly afternoon and evening class sessions, perfect for folks with complicated schedules.



thecrucible.org/about

WHY IS ROSA SMILING?

Meet Rosa and her 8 new wheels

story by Kristin Arzt
photos by Cathy Niland

Rosa Dorantes, The Crucible's Ceramics Department Head, has been working with clay since she was in 7th grade. She proudly remembers having her early ceramics work displayed at her local mall, and stuck with ceramics throughout high school and college. Now, Rosa is proud to be expanding our ceramics studio, doubling the square footage and bringing a long-awaited update to the department—eight new pottery wheels.

After the turbulence of this past year and living through the pandemic, pottery is enjoying a resurgence in popularity. More students are interested in learning ceramics than our department has ever seen. Rosa sees this as an inherent response to the uncertainty that people have been experiencing. “When you are processing a lot of emotions, you need access to a physical release,” she shared. “Out of tragedy comes beauty.”

Ceramics is a proven form of art therapy. In a 2015 study published in *Art Therapy*, researchers found that levels of cortisol, the hormone released in the body when stressed, decreased in 75% of individuals

who engaged in artistic production. Hong Kong-based art psychotherapist Joshua K.M. Nan measured the effects of working with clay on adults with major depressive disorder. He found that those who were working with clay art therapy had lower levels of depression and improved “daily functioning, general mental health, and holistic BMS well-being.”

Throwing on the wheel is a particularly meditative experience, combining physical movement, tactile sensation, mental focus, and a sense of accomplishment. “Wheel throwing is my own meditation space,” Rosa shared. “As I center clay on the wheel, I am also centering myself. It grounds and relaxes me.”

Combine the mental health benefits with the sanctuary Rosa has created in our ceramics studio and you have a recipe for relaxation. “I want students to feel like they are coming into my home—to feel welcome in an environment where they can really express themselves,” Rosa mused. Our newly-expanded pottery studio is an opportunity for each student's own creative expansion and exploration.





Rosa Dorantes throws her first bowl to celebrate ordering The Crucible's Ceramics Department eight new wheels.

"YOU KNOW WHEN YOU HAVE A HARD DAY AND YOU JUST WANT TO UNWIND? THAT IS EXACTLY HOW I WANT MY STUDENTS TO FEEL. THEY SHOULD FEEL LIKE THEY HAVE ARRIVED AT THEIR OASIS."



Rosa shows off her finished bowl, ready to be dried and trimmed up before a bisque firing.

CERAMICS DOUBLES IN SIZE

Until recently, the Ceramics Department's small space has prevented it from growing into the powerhouse our community wanted it to become. When we asked Rosa what she was most excited about regarding the expansion, she shared that she is ready to give the community what they have been requesting for years—wheels!

Over the past few months, Rosa and our studio team have been busy revamping the Ceramics classroom with brand new equipment and an expanded layout. Our staff have added eight new pottery wheels, a clay recycling system, an additional sink, a brand new slab roller, and more. For the first time ever, we will offer classes focused specifically on wheel throwing for all levels, including Wheel Throwing I and II starting this January.

The new recycling system allows our faculty and students to reuse slurry, produced in abundance when throwing on the wheel. This new slurry system will enable our studio to recycle slip into reusable clay, as clay is one of the most easily recycled materials in the world. As long as clay has not been fired, it can be recycled. Many potters keep their throwing slurry, clay scraps from trimming, or broken greenware to recycle and reuse. This new system for reclaiming unused clay will allow The Crucible to further commit to reducing waste in the studios.

In addition to all of these updates, Rosa is expanding our glaze area to include dipping glazes, which will allow students to submerge their pieces into large-scale buckets of glaze. This process is much faster for glazing and is an upgrade from our current brush-only glaze system. Also on the list is a brand new ventilation hood, which will allow for students to work with spray on glazes.



Rosa shows a youth student techniques in hand building during a free grant-funded, multi-week immersion program with McClymonds High School.

This January, Wheel Throwing I and II classes will be open for registration, meaning potters of any level—from beginner to pro—can experience the therapeutic effects of working with clay and throwing on the wheel in our newly-expanded Ceramics Department.

Wheel Throwing I is a beginner-level class that will introduce you to a pottery wheel and get your hands dirty, while our instructor guides you through making your own unique pot. In Wheel Throwing II, students will continue to develop wheel throwing skills such as collaring, larger forms, and unique shapes. This continuing level class explores how to make different functional shapes and vessels, and then finish them for everyday use.

These new offerings will be

an opportunity for our community to expand and grow along with the Ceramics Department. “I am excited to finally meet the needs and desires of what our students want,” Rosa told us. We cannot wait to welcome you into our brand new Ceramics Studio!

ROSA'S JOURNEY TO THE CRUCIBLE

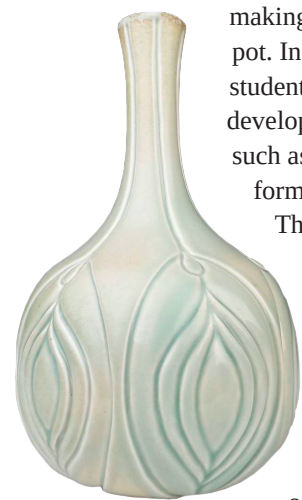
Rosa was born and raised in Oakland to her mother and father who immigrated from Nicaragua and Mexico respectively. Much of her work has reflected themes of womanhood, personal experience, and family. As the Ceramics Department Head, Rosa has made it her mission to create a safe and welcoming space for students, fostering a freedom to experiment and explore ideas.

Since her early college days in San Francisco, Rosa remembers learning about The Crucible. She had heard about the vast facility and the strong sense of community among both students and faculty members. She took note of the building through the window of her BART train into the city.

She started to volunteer and eventually became the Ceramics Department Head. “The community instantly blew me away. Everyone is so enthusiastic about what they know, and excited to share that knowledge,” she shared. “For me, coming to The Crucible is my journey really coming full circle. Now, I get to share my passion for ceramics with others, while being immersed in the greater arts community.”

Through teaching ceramics at The Crucible, Rosa has grown as an artist. Getting to know her students helped her learn how to connect with her audience. Working quickly when giving demonstrations in classes has helped her release any fear or inhibitions when she is making a new piece. “I move with purpose and direction. I work faster,” she told us. “I go with my gut more easily than before I was teaching.” She leads with her instinct when she is working creatively, setting an example for her students to work from a place of uninhibited creative exploration.

“I was born in Oakland, and Oakland is where I first fell in love with ceramics when I was 14,” Rosa told us.



Vase by Rosa Dorantes



Rosa Dorantes wedges clay on one of The Crucible's potter wheels in the Ceramics Department.

"CLAY IS SO TANGIBLE, AND THE POSSIBILITIES ARE VAST. YOU CAN BE FORCEFUL OR DELICATE WITH CLAY. IT ALLOWS YOU TO LET YOUR IMAGINATION GO."

It allows you to let your imagination go."

Rosa's work mimics the flow of organic shapes found in nature and in the female form. Her true passion is creating vessels, like tea pots and vases, that are meant to nurture and provide comfort to a space, "I want you to truly

hold my pieces and feel like you are giving them a hug," Rosa shared.

In Rosa's first ceramics classes, she remembers being taught that working with clay is an inherently human experience. Her teacher shared that making pottery was the second human invention, after fire. The oldest known man made pots date back to 9000 BCE. Rosa told us that she couldn't help but imagine humans burning their fires all night, and waking up to find the earth hard where the clay had cooked. And thus, the art and practical use of ceramics was born. "It's in our DNA to handle this material," she shared. "It is a huge part of our evolution and development."

After thousands of years of working with clay, Rosa loves that humans are still experimenting with the medium, discovering new techniques and styles at every turn. This is exactly why she encourages her students to experiment and play in her classes.



Jug by Rosa Dorantes

Her free-spirited ceramics teacher created a nurturing environment for Rosa and her classmates to work, providing a sense of unrestrained creativity and inspiring female empowerment. Rosa found that clay granted her countless learning opportunities, from the impermanence of the process, to experimentation, to a sense of accomplishment in making something with her hands.

A key lesson in working with clay is acceptance and an awareness of impermanence. There are many steps between shaping wet clay and removing a piece from a glaze firing, which means there are many opportunities for pots to break, crack, or explode. "In ceramics, it's okay to fail. If it breaks, it's okay. You can try something else," she explained. Ultimately, Rosa learned early on that ceramics is a vehicle for both playful and serious inventiveness. "Clay is so tangible, and the possibilities are vast," she shared. "You can be forceful or delicate with clay."





Everything we make starts with the earth—but these areas of study work more with materials taken straight from nature.

CERAMICS

3-hour taster: ceramic mug

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. Make a one-of-a-kind ceramic mug to enjoy your favorite warm beverage. Learn a variety of hand-building techniques in a single session during this fun, project-based class. Mugs are food-grade safe and great for yourself or as a gift.

**total duration 3 hours
offered 4x year | \$195**

3-hour taster: ceramic planter

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. Adding some greenery to your decor? Create your own ceramic planter and cement yourself as a true green thumb! Learn a variety of hand-building and color application techniques in a single session during this fun, project-based class.

**total duration 3 hours
offered 3x year | \$195**

ceramic bowls

ages 16+ | entry level

Make your own super bowls using clay! In this class we explore four different ways of handbuilding your own beautiful bowls. Students will make a vessel out of each technique including pinch pot, coil building, and slab rolling with molds. Students are welcome to bring their own stamps for personalization. After your pots are assembled we will decorate using underglazes for a colorful finish. After class has ended the instructor will fire and finish your bowls with a clear food safe glaze.

**total duration 7 hours
offered 1x year | \$250**

ceramic ornaments

family | entry level

Glaze your own ornaments to give to your loved ones! You will select three pre-fired ornaments to paint and glaze, learning about glazing techniques and color application. After class, the instructor will fire your ornaments and string them up, so they are ready for pickup one week after class ends. As part of our Family Series, parents/guardians with children ages 8+ are welcome to register with their kids and get hands-on making ornaments—just in time for the holidays.

**total duration 2 hours
offered 1x year | \$150**

ceramics I

ages 16+ | entry level

Try your hands at making sculptural and functional forms in clay. This introductory class covers traditional hand-building and surface treatment techniques while pushing the boundaries with unconventional methods. You will leave with a solid foundation in working with clay and the ability to apply your new skill set to other 3D work and materials.

**total duration 30 hours
offered 8x year | \$585**



Planter by Mattie Vukmir



ceramics II

ages 16+ | continuing

Ceramics II is designed for students who have successfully completed Ceramics I and are looking to further advance their knowledge and creativity in working with clay. Students will learn advanced concepts in surface design and refine techniques, both in hand-building and wheel-throwing, to create more consistent, aesthetically-pleasing functional and sculptural pieces. Interesting forms, creative designs, and good craftsmanship are essential in creating engaging pottery and will be emphasized in the class.

prerequisite: ceramics I

**total duration 30 hours
offered 3x year | \$560**

ceramics lab

ages 16+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials. Clay can be purchased for \$20 per bag.

prerequisite: ceramics experience and crucible membership

**total duration 15 hours
offered 5x year | \$250**





family clay play

family | entry level

In family groups, you will learn to make pinch pot figures using your hands to shape, mold, and paint a version of yourself. Then work together to create a family plaque using slabs of clay to decorate. This workshop is designed for ages 5-7 with accompanying adult(s).

total duration 2 hours
offered 1x year | \$20

friday flame: raku

ages 16+ | entry level

End the workweek with fire, friends, and a toast. Glaze small, pre-fired ceramic dishes, then use a variety of organic materials to create incredible surface textures on your vessels during the exciting raku fire. Raku firings, or firings in high reduction environments, are one of the only ways to get vibrant, sparkling colors in glazeware. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

total duration 2 hours
offered 2x year | \$170

large ceramic forms

ages 16+ | continuing

Explore techniques for making larger ceramic forms that can survive the kiln! Make a ceramic sculpture or planter, while practicing handbuilding techniques like coiling and pinching, as well as more advanced sculpting techniques to create a one-of-a-kind piece that will dazzle any home. Size limited to 24" x 18" x 18" and 1" thick.

prerequisite: ceramics I or ceramics experience

total duration 15 hours
offered 2x year | \$435

making multiples: slip casting ceramics

ages 16+ | entry level

Create ceramic multiples! Whether you are interested in making multiple vessels or sculptures, this class covers the basic moldmaking techniques. We will make molds from existing objects and cast clay multiples using clay slip. The clay castings will then be finished, kiln-fired, and glazed. Your personal objects are welcome and should be brought to the first class, and objects can be no larger than 5" x 5" x 5".

total duration 15 hours
offered 4x year | \$450

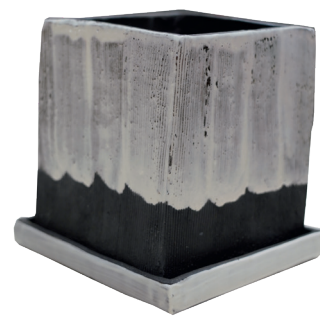
raku

ages 16+ | continuing

Learn basic handbuilding techniques and play with a variety of raku decorating techniques. Raku firings, where ceramic pieces are taken out of the kiln glowing hot and placed in an oxygen-reduced atmosphere, are one of the ways to get vibrant, sparkling colors in glazeware. Your work will be bisqued and ready to be glazed by the following Saturday, where you will practice raku decorating techniques. Work size is limited to 6" wide and 10" high.

prerequisite: ceramics I or previous ceramics experience

total duration 6 hours
offered 1x year | \$225



Planter by Rosa Dorantes

slip casting with plaster molds

ages 16+ | entry level

Learn the process of slip casting ceramics utilizing plaster molds. Cast multiple objects using clay slip, then kiln-fire and glaze your creations. Develop your slip casting skills using a variety of plaster molds in this introductory class.

total duration 6 hours
offered 3x year | \$225

teapot and cups

ages 16+ | entry level

Create your very own teapot and set of tea cups! During this two-session class, learn the techniques for making a slab built teapot and a pair of hand built tea cups perfect for a spot of tea. On the first day, create your set for bisque firing, then return the following week for sanding and under-glazing your elegant handmade pieces with bold colors. Tea sets are food-grade safe.

total duration 15 hours
offered 2x year | \$300



Teapot and cups by Rosa Dorantes



wheel throwing I

ages 16+ | entry level

Learn how to throw clay on a potter's wheel! Students will learn the fundamentals of throwing, including wedging clay, centering, opening, pulling, and shaping a cylinder, bowl, and cup. Learn how to use hand tools to trim and add texture to your pieces, in addition to glaze applications and finishing techniques. One 25lb bag of clay, firing, tools needed, and glazes are provided.

**total duration 30 hours
offered 5x year | \$575**

wheel throwing II

ages 16+ | continuing

Take your wheel throwing skills to the next level! In this course, you will continue to refine your throwing techniques and be challenged to throw larger more complex forms, including vases and plates. Students will continue to explore surface decoration, glazing, and how to combine handbuilding and wheelthrowing. One 25lb bag of clay, firing, tools needed, and glazes are provided.

prerequisite: wheel throwing I

**total duration 30 hours
offered 5x year | \$575**

youth ceramics I

ages 12-18 | entry level

Try your hand at making sculptural and functional forms in clay and create a one-of-a-kind ceramic sculpture or functional vessel. Youth will practice handbuilding techniques and wheel throwing per instructor approval.

**total duration 15 hours
offered 6x year | \$425**



Get notified
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thecrucible.org

youth ceramics II

ages 12-18 | continuing

Youth Ceramics II is designed for students who have successfully completed Youth Ceramics I and are looking to further advance their knowledge and creativity in working with clay. Students will learn advanced concepts in surface design and refine techniques, in hand-building, to create more consistent, aesthetically-pleasing functional and sculptural pieces. Interesting forms, creative designs, and good craftsmanship are essential in creating engaging pottery and will be emphasized in the class.

prerequisite: youth ceramics I

**total duration 35 hours
offered 2x year | \$800**

youth clay critters

ages 8-11 | entry level

Explore clay as a sculptural material to create critters of your own imagination! Learn hand-building techniques, such as slabs, coils, and pinching. We will cover several different surface treatments, traditional glazes, and non-traditional approaches.

**total duration 15 hours
offered 7x year | \$385**

FIRE & PERFORMANCE

fire eating I

ages 18+ | entry level

Amaze an audience with your new skills as a fire eater! You will learn the science and safety behind basic tricks so you can fearlessly perform with open flame. You will learn tracing (how to run fire along the surface of your skin), transfers (moving flame from one source or position to another), various extinguishes, and tips for putting on a great show. You will also make your own set of torches to take home. Fuel, equipment, and fire safety essentials will be covered.

**total duration 4 hours
offered 7x year | \$215**



fire eating II

ages 18+ | continuing

Build your fire eating performance skills with intermediate tricks and principles of strong showmanship. You will construct a pair of torches and develop skills that build on course material covered in Fire Eating I. Class includes a review of safety essentials followed by an introduction to new skills, such as vapor tricks, vapor transfers, on-body transfers, jellyfish, jumping jellyfish, human candles, and more! You will also explore choreography and stage blocking basics to best showcase your new talents!

prerequisite: fire eating I

**total duration 4 hours
offered 2x year | \$205**



fire hula hoop I

ages 18+ | entry level

Build coordination and confidence as you construct your own practice PVC hula hoop and learn basic tricks with and without fire. You will learn beginner on-body and off-body moves, including turns, figure 8's, tosses, isolations, fountains, atoms; and waist, hand, knee, and neck hooping. On the final night, you will work with open flame! PVC is the preferred material for beginner hoops and will spin slower and with more control than store-bought models or Poly Pro hoops.

total duration 16 hours
offered 2x year | \$425

fire hula hoop II

ages 18+ | entry level

Learn to spin your hoop with greater freedom and control. You will construct a Poly Pro hoop—the preferred material for advanced students—and explore intermediate tricks with and without fire. Students will learn advanced on- and off-body moves, including switches, fountains, flowers, atoms, leg tosses, and pizza tosses. We will dive deeper into concepts like plane theory, levels, and transitions, as well as traveling and improvisational techniques. Students will work two nights with open flame.

total duration 15 hours
offered 1x year | \$420

fire poi: introduction

ages 18+ | entry level

Learn to spin fire! Both a dance form and a style of juggling, poi spinning is an expressive performance art that uses weighted lines swung in circular patterns around the body. Using soft, practice poi, you will learn basic moves, such as butterflies, weaves, windmills, corkscrews, buzzsaws, and fountains. You will also be introduced to the concepts of plane theory, sequencing, and in-spin, and anti-spin rotation. On the last class, you will set your fire poi ablaze!

total duration 12 hours
offered 4x year | \$350

fire poi: turns, transitions, and flow

ages 18+ | continuing

Learn how to integrate movement with your poi spinning. After this class, your body and your poi will work together as one and you will know many new tricks. This course highlights choreography, movement, and working with music. You must have your own poi.

prerequisite: fire poi: introduction or permission by instructor

total duration 16 hours
offered 2x year | \$360



fire safety

ages 18+ | entry level

Learn to understand what exactly fire is, techniques to prevent uncontained fires, and how to suppress a variety of fire effects. Walk away with a scientific understanding of the sources of fire and its reactions, as well as hands-on experience putting out fire effects under the expert guidance of Christopher T. Palmer.

total duration 5 hours
offered 6x year | \$95



Scholarships
available for low-
income BIPOC
youth & adults

flame effects II

ages 18+ | continuing

In this intermediate course, make safe, effective, and beautiful propane and liquid fuel flame effects. You'll design and build flame effects sculptures in class working with an instructor and a variety of materials. Build upon your fire effects skills to create unique, fiery projects. Students who build flame effect devices to take home may have additional expenses for materials.

prerequisite: fire effects I

total duration 20 hours
offered 1x year | \$745

LEATHER, TEXTILES, & FINE ART

flame effects I

ages 18+ | continuing

Learn to design and build safe, effective, beautiful flame effect sculptures with propane. You will learn many different ways of manipulating fire for use in sculpture, including accumulator puffer effects, propane and liquid fuel effects, igniters, and electronic controls.

prerequisite: fire safety

total duration 20 hours
offered 1x year | \$675

3-hour taster: framed milagros

ages 16+ | entry level

Design and fabricate framed Milagros inspired by traditional Mexican artwork and iconography. Create metal imagery like hearts, hands, and nature honoring the special moments in your life. Adorn your space with your handcrafted Milagros for good luck and positive affirmations.

total duration 3 hours
offered 1x year | \$195



3-hour taster: leather

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. Cut, fold, and sew a 6"x9" personal bullet journal, then make it your own by adding texture, color, and shine. Take a Taster and meet new friends or give the gift of creativity to someone special.

**total duration 3 hours
offered 6x year | \$195**

bookbinding

ages 16+ | entry level

In this course, you will learn the art of bookbinding, to create beautiful personal books for capturing memories, ideas, drawings, and more. We will focus on the foundation of bookbinding technique, history, and materials. You will construct book blocks, practice stitching techniques, and design covers that express your creative voice. Traditional and contemporary tools will be used to construct several types of books.

**total duration 15 hours
offered 2x year | \$425**

bundle dyeing

ages 16+ | entry level

Learn the beautiful art of bundle dyeing with plants! In this class, you will gain an understanding of how to work with natural dyes as you explore the process of bundle dyeing. We will cover an introduction to natural dye plants and different types of fabric. We will work with natural dyestuffs including food scraps, fresh and dried flowers, eucalyptus, and more. You will learn how to bundle dye on silk and cotton, including how to prepare the fabric, place the dyestuffs, wrap the fabric, and steam the fabric on a stovetop. No prior experience necessary—beginners welcome.

**total duration 4 hours
offered 2x year | \$110**



**Pill bug leather bag by Fuego Youth
Leader Lauren Barlett**

belt and buckle

ages 16+ | entry level

Craft a unique leather belt and bronze cast buckle! Learn and utilize techniques in leather working, including cutting, edging, dyeing, and rivet setting to craft a belt of your own design and pattern. Then sculpt an original buckle design in wax to be cast in bronze in the foundry.

**total duration 15 hours
offered 1x year | \$350**

cartonería: mexican paper sculpture

ages 16+ | entry level

Learn cartonería, the ancient and popular art form of Mexican paper-mâché. Cartonería combines Aztec styles with Spanish techniques and is deeply rooted in ancient Mexican legends, traditions, and craftsmanship. In this course you will create fantastic and colorful sculptures from paper and recycled materials, using mythological beasts and characters as a starting point.

**total duration 24 hours
offered 1x year | \$285**

contemporary embossing

ages 16+ | entry level

Embossing is the process of raising the two-dimensional surface of a design to give it varying degrees of depth, an effect that can't be achieved in painting, drawing, or printing. In this three-hour class, students will learn to emboss using a traditional press, exploring a variety of materials and both traditional and experimental techniques. By the end of class, each student will have produced their own embossed artwork.

**total duration 3 hours
offered 2x year | \$195**





festive embossed cards

ages 16+ | entry level

Create a set of fifteen festive holiday cards through embossing and watercolor! Students will learn to emboss using a traditional press, exploring various materials, and utilizing both traditional and experimental techniques. Then apply their watercolor designs gently on top of the pressed imagery. A unique limited-edition set ready to mail to your loved ones.

total duration 6 hours
offered 1x year | \$250

friday flame: leather

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Start by learning to cut, punch, tool, dye, and stitch leather, then create a unique leather card wallet to take home. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

total duration 2 hours
offered 3x year | \$170

Red Goldfish Bag

Design by Atelier Iwakiri, made by Fuego Youth Leader Lauren Bartlett



indigo dyeing and shibori

ages 16+ | entry level

Learn to create unique patterns on fabric using shibori techniques and natural indigo dye. You will use folding, tying, and binding resist techniques to dye four cotton napkins and one tote bag. You will also learn the basics of mixing and maintaining a natural indigo dye bath.

total duration 4 hours
offered 3x year | \$155

leather working I

ages 16+ | entry level

Learn techniques for working with leather, including cutting, edging, stitching, dyeing, and oiling. We will cover design, setting rivets, adding hardware like buckles, and safety issues. Each student will make a belt and at least one bag.

total duration 15 hours
offered 8x year | \$425

leather working II

ages 16+ | continuing

Apply and build upon basic leatherworking techniques to create a unique leather project of your own design and pattern. From selecting materials to developing a pattern, you will be challenged to problem-solve all steps of the creative process. We will introduce tooling, wet molding, and other advanced techniques. Come with an idea for your final project.

prerequisite: leather working I

total duration 15 hours
offered 2x year | \$425



mexican tin art: nichos

ages 16+ | entry level

Nichos, a folk art tradition popular throughout Central and South America, are a popular way to honor and remember loved ones with a three-dimensional or recessed display box. Using the process of Hojalata (Tin Art), you will make a colorful and highly ornate wall shrine. Bring small items and a picture of the one you want to pay homage to class.

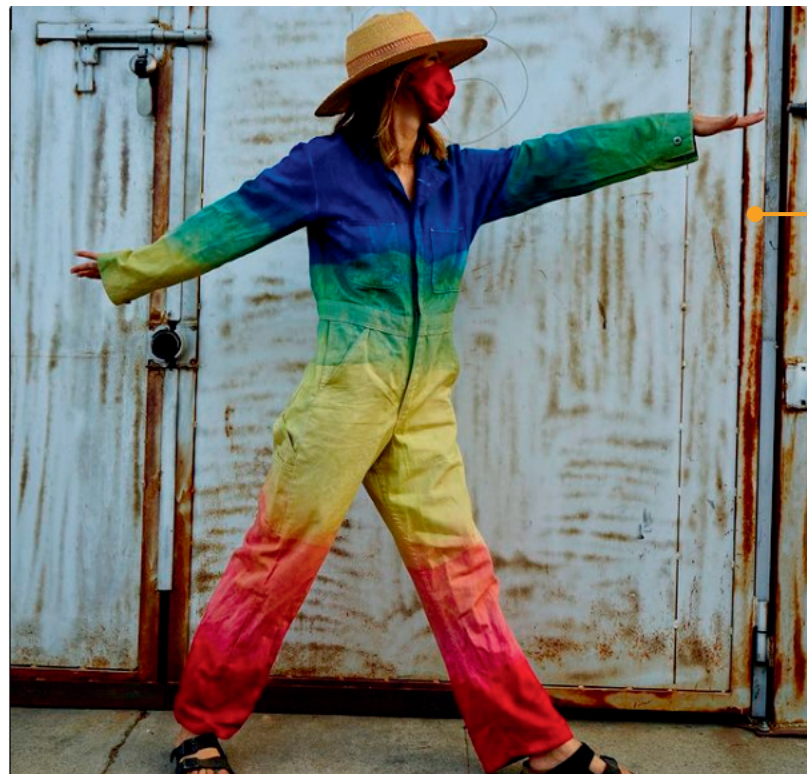
total duration 5 hours
offered 2x year | \$195

mexican tin ornaments

family | entry level

Create unique tin ornaments inspired by repujado and hojalata from Mexico! Learn techniques for tooling aluminum, a malleable form of tin, while working with available designs and patterns or creating a unique design of your own. As part of our Family Series, parents/guardians with children ages 8+ are welcome to register with their kids and get hands-on making ornaments—just in time for the holidays.

total duration 3 hours
offered 1x year | \$195





mordant and indigo dyeing

ages 16+ | entry level

Learn to make a rainbow with natural dye! Cover the fundamentals of natural fibers, mordanting (fabric pre-treatment), and immersion dye baths with red madder root and yellow weld. Create patterns on cloth with shibori techniques and bundle dyeing with whole plants, including dyeing with natural indigo and creating patterns using clay paste resist. Walk away with over 10 personal projects, from silk scarves to cotton bandanas. Students are encouraged to bring your own natural fiber items from home to dye as well.

**total duration 15 hours
offered 1x year | \$375**



See upcoming
dates & times at
thecrucible.org

pet collar and tag

ages 16+ | entry level

Calling all pet lovers! Learn to cut, edge, and dye leather, then set rivets and add a buckle to your pet's new dashing collar! Once the collar is complete, take it over to the Jewelry Department and anneal, stamp, and design a tag for your favorite furry friend.

**total duration 6 hours
offered 1x year | \$200**

youth cartoneria: mexican paper sculpture

ages 8-11 | entry level

Learn cartonería, the ancient and popular art form of Mexican paper-mâché. Cartonería combines Aztec styles with Spanish techniques and is deeply rooted in ancient Mexican legends, traditions, and craftsmanship. In this course you will create fantastic and colorful sculptures from paper and recycled materials, using mythological beasts and characters as a starting point.

**total duration 15 hours
offered 1x year | \$325**

youth leather working

ages 12-18 | entry level

Learn techniques for working with leather, including cutting, edging, stitching, dyeing, and oiling. We will cover design, setting rivets, adding hardware like buckles, and safety issues. Each student will make a belt and at least one bag.

**total duration 15 hours
offered 7x year | \$425**

youth mexican tin art

ages 8-11 | entry level

Learn how to create tin art inspired by repujado and hojalata done in Mexico. After a brief history of the traditional cultural practice and demonstration of techniques, emboss your own designs or pre-drawn patterns onto tooling aluminum.

**total duration 6 hours
offered 1x year | \$155**

youth paper quilling

ages 12-18 | entry level

Come learn the craft of paper quilling, the practice of cutting and bending paper into shapely, decorative forms. Paper quilling projects can be used as wearable and decorative pieces.

**total duration 15 hours
offered 3x year | \$250**

youth paper sculpture

ages 8-11 | entry level

Learn how to design, construct and perfect your own unique sculpture made of paper materials! Utilizing recyclable and everyday paper fibers, students are pushed to create sturdy structures with colorful designs.

**total duration 15 hours
offered 3x year | \$325**

youth print making

ages 8-11 | entry level

Get an introduction to the wonderful practice of printmaking through cartography, relief, and monotype print! Youth will learn how to prep, design, pull and curate their prints while learning basic care of tools and solvents.

**total duration 15 hours
offered 3x year | \$250**





MOLDMAKING

moldmaking and casting with plastic

ages 16+ | entry level

Learn the secrets of plastic casting using flexible molds, just like the ones that professionals use for product development. You will make molds and use them to create plastic reproductions. Personal projects are welcome, subject to size limitations.

total duration 15 hours
offered 6x year | \$350

STONEWORKING

stone carving

ages 16+ | entry level

Learn to carve stone using traditional hand tools. With hammer and chisel you can enjoy the satisfaction of turning a raw piece of stone into a unique creation. All tools will be provided. During the first session, you will learn about selecting your stone and where to buy it. The Crucible may also have a small selection of stone for purchase, for approximately \$35 per stone. Returning students are welcome.

total duration 30 hours
offered 2x year | \$750



WOODWORKING

a finer table

ages 18+ | continuing

Come with ideas to design, plan, and build a table with a drawer. Students who enjoyed making the mortise and tenon table in Woodworking I can go deeper into the process. The first session will be devoted to designing the tables, drawing up the plans, and making cutting lists. Students must provide their own wood by the second session. An optional field trip will be organized to the lumber supply to help select materials.

prerequisite: woodworking I

total duration 40 hours
offered 1x year | \$945

build a skateboard

ages 18+ | entry level

Build your very own custom skateboard from seven layers of hard maple veneer. Learn to shape a foam mold, the woodworking techniques, and the concepts of vacuum press veneering for bending wood. You will practice using basic woodworking power tools, including the band saw and power sanders, as well as hand tools, such as files, rasps, and planes. Apply a basic wood finish and set up your skateboard deck to ride.

total duration 11 hours
offered 1x year | \$425

carving the tudor rose

ages 18+ | entry level

Carve the traditional and historical Tudor Rose design, while learning to work with chisels, gouges, and techniques for creating detail and three-dimensional visualization. By combining stylistic and historical references, you will get to experience wood carving as a centuries-old tradition and a modern means to express your creativity.

total duration 15 hours
offered 1x year | \$390



**Members get
10% off all
classes**

dovetailed drawers

ages 18+ | continuing

Dovetailed drawers have long been seen as a mark of craftsmanship as they're famously tricky to do well. This class will go over the complete construction of a drawer or box made from solid lumber, including half-blind dovetails at the front, full dovetails in back, and a bottom panel floating in a dado. Using skills from Woodworking I, students will use machines to mill lumber to their drawer's dimensions, then learn to cut the various types of dovetails by hand. The drawer made in this class can be used in the cabinet made in Woodworking II, if desired.

prerequisite: woodworking I

total duration 14 hours
offered 2x year | \$500



hand tools

ages 16+ | entry level

This introduction to hand planes, chisels, saws, and proper workbenches is meant for people who would like to work with wood without using machines. Sharpening, traditional jigs, and work holding methods will be touched on as well. Students learn how to cut and plane boards, then build a tray, box, or similar object.

total duration 15 hours
offered 2x year | \$400

marquetry

ages 18+ | entry level

Learn the basics of handling veneer and the decorative technique of marquetry, where you use small, variously colored veneer to create an image. You will make at least two coaster-sized projects, one of which will have the traditional leaf design. You will learn both classic methods that can be done at home, as well as more modern techniques that utilize woodworking machines and laser cutters.

total duration 15 hours
offered 2x year | \$435

pen in one day

ages 18+ | entry level

Students will make two pens at the lathe, one of solid wood and one of your own design built up from several pieces of wood. Since turning pens is a quick process, we will have time to teach you how to choose woods, how to prepare and mount wood on the lathe, and several of the more popular finishes. We will cover safe operation of a lathe, demonstrate how to use common woodworking tools, practice tool sharpening techniques, and discuss options for what kind of lathe you might want in the future, from a small pen lathe to more robust machines that can handle much bigger projects. Bring clothes that can get dirty.

total duration 7 hours
offered 3x year | \$285

frames and panels

ages 18+ | continuing

From picture frames to doors, we'll look at ways to join wood into frames. We will start with building a mitered-corner picture frame and then proceed to make a traditional mortise and tenon door with a floating raised panel. Students will be required to mill their parts from solid lumber as learned in Woodworking I. This doors made in this class can be used on the cabinet made in Woodworking II, if desired.

prerequisite: woodworking I

total duration 15 hours
offered 1x year | \$425

fundamentals of woodworking

ages 18+ | entry level

Begin your woodworking experience in this introduction to tools and techniques. We will cover the basics of wood technology, what hand tools and power tools to use, how to use them, and how to care for them, as well as an intro to finishing, and a discussion of joinery vs. structure. Bring a notebook and comfortable shoes, as this will be a fast-paced, hands-on overview.

total duration 15 hours
offered 14x year | \$445

sharpening

ages 16+ | continuing

Whether one works by hand or mainly with machines, keeping a keen edge on your hand tools is vital. Sharpening can seem like a deep skill to master, but getting going with it isn't so bad, so the sooner you start the better. In this class, we'll teach you the basic methods of sharpening edged tools using waterstones, and give you enough knowledge to purchase what supplies you need to continue at home. Bring a couple of your own tools to practice on if you wish.

prerequisite: woodworking I

total duration 4 hours
offered 4x year | \$150

spoon carving by hand

ages 18+ | entry level

Learn basic principles of working with wood while making your own carved wooden spoon. Topics covered include different types of wood, grain direction, carving, shaping, and food safe finishes. Through short demonstrations and lectures, we will use a combination of power and hand tools, exploring the material for its functionality as a creative medium. At the end of the workshop, students leave with a unique spoon, ready to use!

total duration 12 hours
offered 2x year | \$345

take home jigs

ages 18+ | continuing

Craftspeople have traditionally used jigs to improve the speed and accuracy of their hand tool work, but making them well by hand is challenging. Learn about how to properly use jigs, then use the machines in our workshop to make a precise bench hook and a shooting board with miter attachments. Bring your own bench or block plane, or use ours to see what will be right for you.

prerequisite: woodworking I

total duration 14 hours
offered 2x year | \$400



Wooden Toy by Eric Blanpied





the bandsaw box

ages 18+ | entry level

Learn to design, make, and finish a unique wood box. With an emphasis on tool safety and material exploration, we will use a combination of power tools and hand tools to make boxes of all shapes and sizes. Beginning with a solid block of wood, you will learn how to lie out, cut, sculpt, and reassemble the block into the form of a box. Demonstrated techniques include hidden hinges, small drawers, pull knobs, and fitted lids, as well as texturing, carving, burning, painting, and finishing.

total duration 15 hours
offered 2x year | \$420

wooden bench

ages 18+ | entry level

Learn basic concepts and techniques of woodworking, including how to use power tools and traditional and modern hand tools to create a simple wooden bench. Explore how to create strong joints for connecting wood and the proper way to glue boards together to make a wooden bench.

total duration 14 hours
offered 2x year | \$395

wooden box

ages 18+ | entry level

Create a tabletop wooden box for everything you need to keep in one place! After a basic introduction to woodworking handtools, create a small, functional wooden box to take home. Use for work, special keepsakes, or as a jewelry box.

total duration 4 hours
offered 6x year | \$225

wooden toy

ages 18+ | entry level

Build a unique, customizable wooden toy! Learn to safely use woodworking tools and machines, then complete your project with colorful, foodsafe finishes. Class projects include wooden pull toys, simple dollhouses, or animal rattles. You will leave with a beautiful heirloom toy to last for generations.

total duration 8 hours
offered 2x year | \$300



woodworking I

ages 18+ | entry level

Learn how to use power tools and hand tools safely and effectively to build a piece of fine furniture. Class assignments introduce the core concepts and techniques required for most woodworking projects, including milling boards to straighten them, choosing and creating appropriate joints to connect them, and the careful handwork to finish everything well. Students leave with a strong foundation for more advanced wood classes and a small end table.

total duration 40 hours
offered 13x year | \$1,050

woodworking II

ages 18+ | continuing

Build on the skills you developed in Woodworking I by making a small nightstand. Woodworking

II introduces the basics of

face-frame cabinet design and construction, working with plywood, dado joints, basic drawer making, hardware installation, and more. Students will finish the class with a good understanding of casework and a cabinet customized to their needs.

prerequisite: woodworking I

total duration 40 hours
offered 2x year | \$950

woodturning I

ages 18+ | entry level

Use a lathe to turn a rough piece of wood into a beautifully shaped spindle-turned mallet and face-plate mounted bowl. You will learn the basics of the turning process and cover tool usage, sharpening, wood selection, preparation, and finishing. Offered in a co-ed and womxn-only format.

total duration 15 hours
offered 10x year | \$525

woodturning II

ages 18+ | continuing

Explore more advanced projects such as goblets, close-fitting lidded boxes, and special projects while honing your turning skills. This class gives students more time on the machines with the guidance of the instructor to create woodturned sculptures, explore more technical aspects of end-grain turning and mounting pieces, plus fit and finish.

prerequisite: woodturning I

total duration 14 hours
offered 3x year | \$525



woodworking lab

ages 18+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials.

prerequisite: continuing woodworking class and crucible membership

total duration 20 hours
offered 9x year | \$525



youth woodcarving and sculpting

ages 8-11 | entry level

Learn the history, cultural significance, and process of woodcarving and sculpting, including design and carving approaches. Through hands-on demonstration and approach, students get expert guidance through every step of the carving process, from brainstorming to adding fine detail. You will create a unique 3D project of your own.

total duration 15 hours
offered 5x year | \$425



Scholarships
available for low-
income BIPOC
youth & adults

youth woodturning

ages 12-18 | entry level

Using a lathe, you can turn a rough piece of wood into a beautifully shaped spindle or bowl. In this jam-packed class, you will learn the basics of the turning process as you explore small bowl turning and spindle turning. The class will cover tool usage and sharpening, as well as wood selection, preparation, and finishing.

total duration 15 hours
offered 1x year | \$510



youth woodworking I

ages 14-18 | entry level

Learn to use hand and power tools to shape wood into objects that will last for decades. You will learn about the properties of lumber, safe tool use, measurement and layout, and fundamental woodworking joints. You will leave with an end-grain cutting board, a mitered corner box, and the skills to build an unlimited range of wooden objects.

total duration 15 hours
offered 6x year | \$470

youth woodworking II

ages 14-18 | continuing

Youth students will learn to use power tools and hand tools safely and effectively to build a small end table. This course covers the techniques required for most woodworking projects, including milling boards to straighten them, choosing and creating appropriate joints to connect them, and the careful handwork to finish everything well.

prerequisite: youth woodworking I

total duration 35 hours
offered 2x year | \$900



Chess set by David Page

Made at The Crucible to be auctioned off during our annual Fire & Light Soirée Gala and Fundraiser

MEET C'ZARRIAH

This glass flameworking artist shows that The Crucible is where the student becomes the teacher

Story and photos by Cathy Niland

As C'Zarriah Davis-Smith turns on the gas line and gathers her glass frit, a sense of calm falls over the flameworking studio. It's a feeling often found in the presence of someone who loves what they do. And 18-year-old C'Zarriah loves working in glass.

Just over three years ago, when C'Zarriah was still a sophomore at Oakland Tech, she visited The Crucible for one of our four annual Field Trip Days. During Crucible Field Trips, Oakland public school students visit our studio for a free day of live, interactive demonstrations in departments like blacksmithing, welding, woodworking, and glass flameworking. For many students, including C'Zarriah, it's their first exposure to the industrial arts.

At Oakland Tech, C'Zarriah studied drawing and painting, but her visit to The Crucible made her see artmaking in a new way. "That field trip to The Crucible changed my perspective on art,"

C'Zarriah explains. "I thought I could only do 2D art, more traditional art. It didn't cross my mind that I could do industrial art like flameworking or glass blowing."

Shortly after her first visit to The Crucible, C'Zarriah learned about available scholarship opportunities for Oakland youth. With support from The Crucible's scholarship program, she registered for her first class, Youth Glass Flameworking. She couldn't wait to get started on her new creative journey. "Trying a new medium where you don't know anything or how to best approach it is exciting. My first summer at The Crucible, I discovered that I really, really enjoy flameworking, more than just a hobby. It makes me happy!"

Despite having never worked behind a torch before, her instructors were immediately impressed with her drive and commitment to improving. Crucible staff encouraged C'Zarriah to apply for our





After first coming to The Crucible on a free youth field trip, C'Zarriah now works as a teaching assistant in The Crucible's studios. Here, she demonstrates frameworking techniques with borosilicate glass.



C'Zarriah gives youth students a demonstration in Glass Flameworking during a free Crucible Field Trip.

two-year Fuego Youth Leadership Program, an opportunity where high school students spend four weeks expanding their industrial arts knowledge and developing leadership skills during Youth Summer Camps.

C'Zarriah was accepted, and during her first and second years as a Fuego, she worked with mentors Heather Katz and Janet Hayes respectively, to design and create a final project in glass flameworking. Her second-year project—a fish tank featuring multiple sea creatures—is still her favorite thing she has made.

“The first year, I did an octopus, and I wanted to keep with a similar theme but to elevate it,”

C'Zarriah explains. “The fish tank project was one of the most challenging art pieces I've ever made. It was a lot of trial and error. The first fish came out looking real wonky, but I got it together.”

To make the various elements of her tank C'Zarriah used three different types of glass—soft, borosilicate, and fused—a challenging undertaking according to Janet.

“All of these types of glass work differently and you can't actually combine them,” she explains. “C'Zarriah made her elements out of the different types of glass using very different techniques and then combined them into one composed piece.”

For the centerpiece of the fish tank, C'Zarriah created a large jellyfish. Though she attempted to create the jellyfish head in flameworking, the size proved challenging

the fishing wire—it all came together. It was stressful yet educational and fun.”

“C'Zarriah is always willing to challenge herself with developing a piece that she hasn't seen other people do,” Janet adds. “The aquarium was really a wonderful project!”

In addition to their personal projects, Fuego Leaders also support faculty in the classroom during summer camps and

work with our Fuego Coordinator to explore entrepreneurial pathways in the industrial and fine arts. When C'Zarriah became a Fuego Leader, she was eager to further develop her glass

flameworking skills. However, she didn't anticipate finishing her two-year program with a newfound love of teaching.

“I didn't know I had this passion for teaching until Fuego. When I was showing the kids something I loved doing and got to see their enjoyment and how they grew to love it too—that was really exciting.”

After graduating from the program,

**"THAT FIELD TRIP TO THE CRUCIBLE
CHANGED MY PERSPECTIVE ON ART...
IT DIDN'T CROSS MY MIND THAT I
COULD DO INDUSTRIAL ART."**

for the delicate process and she turned to Glass Fusing & Slumping for help.

“So many people came together to help me with my project, it was really fun and felt like a real community.”

C'Zarriah continues, “[Glass Flameworking Department Co-Head] Ralph McCaskey gave me the tank, somebody gave me rocks for the bottom, everyone was helping with



C'Zarriah stayed involved at The Crucible, helping instructors prep for classes and leading flameworking demonstrations during a Field Trip Day in February 2020.

For C'Zarriah, that moment was special. A field trip to The Crucible helped her discover a lifelong passion for glass. Now, leading demonstrations, she had come full circle. "What if my teacher had never taken me on that field trip? What are the odds I would have discovered flameworking?" she wonders.

A PATH ON PAUSE

Unfortunately, those demos would be her last for a while. In March 2020, The Crucible closed due to the outbreak of COVID-19. But C'Zarriah stayed connected to The Crucible and was able to return in September as a part-time Studio Assistant. On the studio crew, she helped with enhanced cleaning procedures and studio improvements and was also able to continue practicing and perfecting her craft in the flameworking studio.

This summer, at just 18 years old, C'Zarriah started working as a Teaching Assistant (TA) in both Glass Flameworking and Glass Fusing & Slumping. According to C'Zarriah, being a younger instructor helps her better relate to her youth campers' needs. "Having only done flameworking for three years, it's still fresh in my mind." She adds, "I remember what it feels like not to know anything so I get it when kids don't turn their hands the right way or sit too close to the torch."



C'Zarriah shows off her final Fuego Youth Leadership Project, a glass fish tank filled with a variety of glass flameworked and glass fused aquatic creatures.

C'Zarriah works as a teaching assistant in the Glass Fusing and Slumping department during Youth Summer Camps.



“MY IDENTITY IS IMPORTANT IN MY GLASS WORK BECAUSE IT’S A WHITE MALE-DOMINATED ART. BEING ME IN GLASS FLAMEWORKING IS REALLY IMPORTANT...I CAN BE THAT EXAMPLE FOR OTHER KIDS.”

“C’Zarriah’s a very natural teacher and she has the patience and the compassion that you need to be a good teacher,” shares Janet. “I’m really impressed by her willingness to work with students who are struggling, particularly students with learning differences. She’ll spend one on one time helping them get the techniques down.”

TA-ing during our 2021 Youth Summer Camps was a milestone for C’Zarriah. Now she is looking forward to becoming a full-fledged glass instructor, hopefully within the next year. “My main goal is to teach, so I’ve been networking and doing classes. I want to continue instructing kids on how to do flameworking.”

As an instructor, C’Zarriah hopes to inspire other young students like her. “My identity is important in my glass work because it’s a white male-dominated art. Being me in glass flameworking is really important. Even if I don’t see myself, I can be that example for other kids.”

One of C’Zarriah’s most significant takeaways from her time as a student is that patience and perseverance are the keys

to success—a sentiment she tries to relay to youth students as much as possible. “Your first projects are going to look a little crazy, and that’s okay,” she says. “Just keep trying, and with practice, you will get better. Just try stuff out—do strange color combinations, try different materials, explore other glass classes—just see what works.”

C’Zarriah begins to clean up her bench, putting tools away and turning off the gas line. We ask if she thinks coming to The Crucible has changed her life. She responds with an emphatic “most definitely!”

“I wouldn’t be doing flameworking and wouldn’t have known it was a deep passion of mine. My first love is flameworking. The Crucible definitely changed how I view art and what I can do with art. It opened up my mind to the idea that you could do anything you like. If you want to make a 50-foot structure, you can. It takes work and teamwork and materials and effort—but you can do it!”





Cutting, fusing, bending, blowing, casting, torch work, coldworking—glass is a delicate material and medium that has entranced artists since 1500 B.C.E.

ENAMELING

20 shades of grey: medieval techniques

ages 16+ | continuing

Often associated with medieval French enameling, grisaille (grey) is the application of white enamel to a black enamel background, creating halftones and shading. Light areas of the design will have more white enamel layers than gray areas, creating an impression of low relief. Students work with silver foil and touches of gold to enhance the pieces. We will also explore sgraffito-style grisaille and other experimental approaches.

prerequisite: enameling I

total duration 15 hours
offered 1x year | \$355

3-hour taster: enameling

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to enamel sifting and kiln-firing, make a stenciled enamel pendant or keychain to take home. Take a Taster and meet new friends or give the gift of creativity to someone special.

total duration 3 hours
offered 8x year | \$195

a primer in 3d enameling

ages 16+ | entry level

Explore the art of 3D metal forms with Judy Stone in this introductory one-day workshop. We will work with soft copper sheet, mesh, and copper wire. Students learn to plan for adding enamel to forms and how to fire forms. Spray equipment, industrial enameling materials, and traditional jewelry enamels are used.

total duration 6 hours
offered 1x year | \$230

cloisonné

ages 16+ | continuing

Hone your artistic skills with renowned enamel artist Roberta Smith and the intricate, scientific process of cloisonné enameling. Use the rich, subtle, and distinctive colors of transparent and opalescent enamels on fine silver to create small pieces of jewelry or artwork. Students learn painterly shading techniques and high-gloss polishing.

prerequisite: enameling I

total duration 15 hours
offered 1x year | \$360



Members get
10% off all classes

enamel hearts

ages 16+ | entry level

Spend the morning making an original heart-shaped pendant for your valentine, pet, or yourself—just in time for Valentine's Day! Sweetly sentimental or post-apocalyptic, the end result is up to you. Cut your own individual heart shape in fine gauge copper, add texture and dimension, then apply powdered vitreous enamels and fire in the kiln to add color and vibrancy.

total duration 3 hours
offered 1x year | \$150



Giraffe Cloisonné pendant by Sheri Jurnecka

enamel ornaments

family | entry level

Add a special touch to your holiday traditions with an enameled ornament of your own design. Using flat, precut copper shapes as a base, layer colored opaque glass in stenciled designs, then fire it in the kiln to create a unique ornament you can pass down from generation to generation. Finish your ornament with a decorative hook to add to your tree or give as a gift. As part of our Family Series, parents/guardians with children ages 12+ are welcome to register with their kids and get hands-on making ornaments—just in time for the holidays.

total duration 2 hours
offered 1x year | \$180

enamel with mesh, wire, and foil

ages 16+ | entry level

Lightweight metals such as copper foil, mesh, and wire can easily be formed to make 3D objects or bas relief textured wall pieces and jewelry. Practice folding, bending, tabbing, sewing, and weaving metal to give the seemingly fragile materials texture, weight, and heft. Then apply enamel to your formed objects to add color and strength to your formed structures. Students will experiment with both torch and kiln firing.

total duration 12 hours
offered 1x year | \$315





enameling I

ages 16+ | entry level

Discover the ancient art of fusing glass to metal. You will learn techniques in metal preparation and fabrication for enameling, kiln properties and firing methods, properties of enamel, and dry and wet applications.

total duration 15 hours
offered 8x year | \$400

enameling II

ages 16+ | continuing

Work with master enamel artist Judy Stone to further develop the skills learned in Enameling I, including torch firing, basic enamel painting, and working with precious metals and 3D forms. In addition to a lot of experimenting, students will produce at least three finished pieces.

prerequisite: enameling I

total duration 12 hours
offered 2x year | \$310

enameling lab

ages 16+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials.

prerequisite: enameling I and crucible membership

total duration 15 hours
offered 7x year | \$175

enameled stainless steel bowl

ages 16+ | entry level

In this half-day course, students will learn how to prepare a stainless steel bowl for enameling and airbrush it with liquid white enamel. Using sgraffito, a decorative scratching technique that reveals a lower layer of a contrasting color, students will make their own design in the white enamel, then fire the bowl, leaving with their own unique enameled steel vessel!

total duration 4 hours
offered 2x year | \$185



Flameworked Marbles by Michael Dickinson

exploring liquid enamels

ages 16+ | entry level

Originally formulated to glaze steel in the 1800s, liquid enamels are referred to as industrial or porcelain enamels because of their similarity to ceramic glazes. They can be painted, splashed, airbrushed, and combined with other media to add spontaneity to enameling. Students will use these enamels, in conjunction with more standard forms of enameling, to create several test tiles and a small wall piece on copper.

total duration 7 hours
offered 1x year | \$185

fred ball experimental enameling techniques

ages 16+ | entry level

Fred Uhl Ball (1945-1985) was an enamelist who lived and taught in Sacramento. His work was viewed as highly unorthodox at the time, but created a firm basis for current contemporary enameling. Specific techniques include working with fire scale, creating collages, using liquid enamel and other materials associated with the porcelain enamel industry, over- and under-firing, and much more. Explore this inspiring approach with Judy Stone.

total duration 15 hours
offered 1x year | \$295

friday flame: enameling

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Sift, stencil, and practice sgraffito with dry enamel, designing and making a copper pendant to take home. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

total duration 2 hours
offered 3x year | \$190

plique-à-jour: stained glass enameling

ages 16+ | continuing

Plique-à-jour (open to light) is the most admired of the many enameling techniques with French names. Enamel is fired into a backless frame creating a luminous effect similar to looking through a stained glass window. In this class you will learn how to design, make, and finish pierced plique-à-jour pieces, sawing out metal and filling the spaces with vitreous enamel. We will work with fine silver and various enamels to make pendants and earrings.

prerequisite: enameling I

total duration 15 hours
offered 1x year | \$355



re-enameled camping ware

ages 16+ | entry level

Get better acquainted with enameling as an art form by adding your own design to pre-enameled camping ware. Using liquid aka porcelain enamels, students will spray, stencil, paint, or even splatter their own one-of-a-kind design on a plate, bowl, or small mug of their choosing. Students will be provided one camping ware piece and can purchase additional if desired.

**total duration 3 hours
offered 3x year | \$200**

torch fired enameling

ages 16+ | entry level

Learn how to use the torch to fuse glass to metal! Working on copper, you will learn the basics of how the enamel medium works and how to fuse using the torch. We will go over metal preparation, enamel application, and the special considerations of using a torch for fusing. You will leave with several completed projects, including a pair of earrings and a pendant.

**total duration 4 hours
offered 2x year | \$210**

saw and solder champlevé

ages 16+ | continuing

Champlevé is a beautiful enameling technique where recessed areas in metal are filled with vitreous enamels. Using design techniques like sawing, filing, sweat soldering, wet packing, stoning, finishing, and patina, students will create a design in metal, solder it to a metal backing, then fill the open areas in the design with colorful enamels to be fired in the kilns. Students will complete at least two earrings, pins, or pendants. Prior sawing and soldering experience is helpful, but not required.

prerequisite: enameling I

**total duration 14 hours
offered 1x year | \$345**

youth enameling

ages 12-18 | entry level

Discover the ancient art of fusing glass to metal. You will learn about metal preparation and fabrication for enameling, kiln properties and methods for firing, properties of enamel, and dry and wet application techniques.

**total duration 15 hours
offered 2x year | \$345**



See upcoming
dates & times at
thecrucible.org

GLASS BLOWING

bottles and vases

ages 16+ | continuing

In this class, students will make bottle and vase forms with an emphasis on elongated necks. The course will focus on three methods of stretching the neck: on the pipe, on the punt, and by using gravity. Students will learn to set up their bubbles, practice heat control, and learn different techniques for puntying, tweezing, trimming, and the fundamentals of creating handles. This is a great intermediate step for beginning glass blowers looking to further their skills, while gaining the fundamental knowledge of how to make classic amphora vases, and more.

**prerequisite: glass blowing II:
cups class**

**total duration 16 hours
offered 1x year | \$655**



decorative glass pumpkins

ages 16+ | entry level

Try your hand at glass blowing while creating your own decorative glass pumpkins. Learn to safely gather glass from the furnace, apply colors, and shape and sculpt molten glass. These glass art pieces make great gifts all year round! Be prepared to work in the heat!

**total duration 5 hours
offered 2x year | \$315**

fundamental forms

ages 16+ | continuing

Students will learn to make three different essential forms in glass—a cylinder, a hemisphere bowl, and a cone—and master the skill of gathering glass from the furnace. First, develop proficiency in creating each shape with two gathers, then take a third gather and practice the challenge of blowing larger vessel forms. Instructors will work with students individually to address areas that need strengthening.

**prerequisite: glass blowing II:
cup class**

**total duration 16 hours
offered 1x year | \$625**



**Hand blown glass saloon
bar set by Sam Schumacher**

Auctioned off during our
annual Fire & Light Soirée
Gala and Fundraiser

glass blowing I

ages 16+ | entry level

Learn the basic skills and techniques to create a personalized hand-blown glasswork. With supportive instruction in a team environment, you will learn to safely work with molten glass, gather glass from the furnace, apply colors, and shape and sculpt molten glass. Be prepared to work in the heat!

total duration 16 hours
offered 14x year | \$520

glass blowing II

ages 16+ | continuing

Build upon the skills acquired in Glass Blowing I by learning to make a drinking glass! We will explore the design and creation of various forms of practical (and not-so-practical) drinking ware, including applying color and creating hot bits for feet, handles, and wraps. Students are encouraged to bring a sketchbook.

prerequisite: glass blowing I

total duration 16 hours
offered 4x year | \$645

glass blowing lab

ages 18+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials.

prerequisite: glass blowing II and crucible membership

total duration 25 hours
offered 7x year | \$520

glass flowers and mushrooms

ages 16+ | entry level

Learn the basics of hot glass sculpting, including techniques in gathering molten glass out of the furnace, marvering, color application, and glass shaping. In this three-hour workshop, you will sculpt two different types of both flowers and mushrooms from hot glass.

total duration 3 hours
offered 3x year | \$195



Glass blown flutes by Erik Eiserling

glass implosion bowls

ages 16+ | entry level

In this entry level, one-day workshop, you will create your own blown glass bowl. Learn how to gather molten glass from the furnace, apply color, then shape it into a bowl using a blowing and sucking technique.

total duration 5 hours
offered 1x year | \$325



Get notified
when classes
go on sale at
thecrucible.org

glass paper weights

ages 16+ | entry level

Demystify the secrets behind glass paperweights with an excellent entry level class for anyone wanting to dabble in hot glass. In this class, you will learn to gather molten glass out of the furnace, apply color, and manipulate and shape the glass. Proper use of traditional glass blowing tools and key terminology are also explained. Expect to create a one-of-a-kind paperweight that will mesmerize your friends!

total duration 4 hours
offered 2x year | \$395

glass ornaments

ages 16+ | entry level

Decorate your home with your own hand-blown glass ornaments. In this class, instructors guide the process of basic glass blowing, including gathering molten glass from the furnace, applying color, blowing a hollow vessel, and attaching a hot glass loop to hang the ornaments.

total duration 5 hours
offered 2x year | \$295

goblets

ages 16+ | continuing

Long considered the holy grail of glass blowing, it is said if you can make a goblet, you can make anything. In this class, you will learn a variety of assembly methods, including pulled cups, straightening, blown feet, avolios, dropped stems, and utilization of the garage, all based in the Venetian technique.

prerequisite: glass blowing II: cups class

total duration 20 hours
offered 1x year | \$445





youth glass blowing II

ages 14-18 | continuing

Continue to work towards glass blowing proficiency in this intermediate-level class. We will utilize new tools, techniques, and an expanded knowledge of the physics involved to help hone our hot shop skills. Students will work in small groups to create both functional and sculptural pieces. Be prepared to work in the heat!

prerequisite: youth glass blowing I

total duration 15 hours
offered 1x year | \$675

hearts of glass

ages 16+ | entry level

Speak the language of love with glass! In this exciting entry-level workshop we simplify the iconic and complex organ that symbolizes love and life—the heart. In our hot shop, students learn basic glass working techniques to blow, shape, and mold hot glass. Your work of art will be in the form of a heart.

total duration 5 hours
offered 2x year | \$295

hot glass sculpting I

ages 16+ | continuing

Explore the sculptural aspects of molten glass. We will focus on color application, bit work, hot torch, and garage use. Students gain an understanding of the technical vocabulary of glass blowing. You will also learn the advantages and disadvantages of working with blown versus solid glass.

prerequisite: glass blowing I

total duration 20 hours
offered 1x year | \$570



Bronze casting with blown glass by Louisa Sanders

perfecting the punt

ages 16+ | continuing

This class is designed to demystify the punt, an important but generally not well understood technique, where much of the work of blowing glass is done. You will learn to effectively make and use the two main types of punt—the cup and the dome—as well as specialty punts. Timing, temperature, partnering, proper usage, fixing, and proper punt removal will be covered.

prerequisite: glass blowing I

total duration 5 hours
offered 1x year | \$295

shot glass class

ages 16+ | entry level

Learn to blow glass and make your own colorful shot glass. Students will learn to gather and color hot glass, then shape it into a functional shot glass. Once your glass has cooled, return on Friday for a tasting of fine spirits with local spirit experts.

total duration 6 hours
offered 5x year | \$220

youth glass blowing I

ages 14-18 | entry level

Learn the basic skills and techniques to create a personalized hand-blown glasswork. With supportive instruction in a team environment, you will learn to safely work with molten glass, gather glass from the furnace, apply colors, and shape and sculpt molten glass. Be prepared to work in the heat!

total duration 15 hours
offered 10x year | \$700

youth hot glass sculpting

ages 14-18 | entry level

Your imagination can come to life in glass! In this class, youth will learn to use bit work, hot torches, and color applications on solid glass to create paper weights, sea animals, mythical creatures, realistic everyday objects, and more!

total duration 15 hours
offered 1x year | \$500



GLASS CASTING & COLDWORKING

3-hour taster: pâte-de-verre

ages 16+ | entry level

One of the earliest techniques of glass manipulation, pâte-de-verre or “paste of glass” is a versatile kiln casting technique that uses glass paste. In this three-hour course, you will learn the fundamentals of pâte-de-verre, including color and application techniques, while making a small shallow bowl.

total duration 3 hours
offered 2x year | \$195



glass coldworking and engraving

ages 16+ | entry level

Learn to grind and polish glass in our expanded coldworking space! Using glass blanks, students experiment with techniques in cutting, drilling, carving, and sandblasting. We will introduce lathe work concepts and provide the chance to complete at least two ground and polished objects. This is an entry-level course, but returning students learn more advanced techniques.

total duration 15 hours
offered 2x year | \$385



Shop classes
online at
thecrucible.org

glass coldworking lab

ages 18+ | continuing

Taking a lab is a great way to practice and perfect the skills you learn in class. In labs, you can work on class assignments or your own projects. Lab time is supervised, but does not include instruction or materials.

prerequisite: One-Day
Coldworking Workshop or
Coldworking and Engraving,
and Crucible membership

total duration 15 hours
offered 2x year | \$330

imagery on glass

ages 16+ | entry level

Translate imagery onto glass! Transparency and smooth surface make glass an ideal medium for expression. Using the sandblaster and engraving tools, etch, scratch, draw, and carve ideas onto room temperature glass. Explore experimental and traditional glass decorating techniques, learn techniques for customizing glassware, and leave with your own personalized glass art. Sandblasting, photo etching, vitreous enamels, diamond engraving, glass cutting, and sanding techniques will all be covered.

total duration 15 hours
offered 1x year | \$400

kiln casting glass sculpture I

ages 16+ | entry level

Create glass sculpture using the ancient technique of lost wax. Students learn wax sculpting techniques to create wax positives that are invested in a refractory material to create a mold. The mold is de-waxed to create a void that is filled with glass melted in a kiln. When cooled the refractory is divested and the wax positive is now glass. An introduction to cold working techniques is included.

total duration 15 hours
offered 2x year | \$450

kiln casting glass sculpture II: reverse relief

ages 16+ | continuing

Kiln cast reverse relief is creating imagery inside of glass. You will carve hardened plastic-silica, attach it to the inside a mold, and melt glass into it. When complete, one looks through the glass to see the imagery, giving an atmospheric and mysterious feel to your piece. An introduction to cold working techniques is included.

prerequisite: kiln casting glass
sculpture I

total duration 15 hours
offered 2x year | \$415

one-day coldworking workshop

ages 16+ | entry level

This introduction to our glass cold shop is designed to prepare you for the cold shop CREATE Program assessment. We will demonstrate safety, proper tooling techniques, and machine maintenance. Using glass blanks, we will also delve into the tools and techniques of sawing, drilling, carving, sandblasting, grinding, polishing, and gluing glass.

total duration 6 hours
offered 2x year | \$235



youth cast glass sculpture

ages 12-18 | entry level

Learn the fundamentals of glass casting, including making open-faced molds from a clay positive and three-dimensional lost wax casting. You will learn to sculpt with wax, prepare and divest molds, and kiln fire your glass pieces, then explore a variety of finishing techniques, including grinding, sandblasting, and polishing your final work.

total duration 35 hours
offered 1x year | \$835

GLASS FLAMEWORKING

3-hour taster: glass flameworking

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to melting and shaping borosilicate glass with an oxy-propane torch, create small glass marbles, mushrooms, or hearts to take home. Take a Taster and meet new friends or give the gift of creativity to someone special.

total duration 3 hours
offered 17x year | \$195

advanced marble making techniques

ages 16+ | continuing

The magical world of glass marble making continues in this course for the enthusiast. Explore advanced techniques, such as color, depth, texture, organic detail, murrine and cane use, and surface decoration. Students create vortex marbles, implosion marbles, and mystical dichroic galaxy marbles.

prerequisite: glass
flameworking I or beginning
marbles

total duration 15 hours
offered 1x year | \$380

adventures in soft glass: fabulous fish

ages 16+ | continuing

This intermediate-level class will have you sculpting fabulous solid and hollow-bodied fish. Emphasis will be on both structural and delightful decorative glass flameworking techniques, along with an exploration of various aquatic life forms. Fun is the main ingredient!

prerequisite: glass beads I or
glass flameworking I

total duration 8 hours
offered 1x year | \$275

adventures in soft glass: finding your inner monster

ages 16+ | continuing

Extend your glass experience by learning techniques in creating open hollow forms. Monster expert Ralph McCaskey takes you on a journey in soft glass sharing secrets to creating facial expressions (if, indeed a bead could have a face) with a concentration on the eyes, thought of as windows to the soul. A brief historical look at monsters will give you a good starting point for your project. The class will wind up with embellishment techniques, such as feathers and electroforming.

prerequisite: glass beads I or
glass flameworking I

total duration 8 hours
offered 1x year | \$275

beginning marbles

ages 16+ | entry level

Create nature's most perfect form—the sphere—in glass! After a basic introduction to melting and shaping borosilicate glass, you will complete several marble designs, including the clear gravity marble, the outside twist, the ribbon, or the eyeball. Techniques include hold and cold seals, color pulling, and color application.

total duration 7 hours
offered 2x year | \$250

Flameworked monsters by
Ralph McCaskey

friday flame: glass flameworking

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Learn to make a gather, shape glass, make hot seals, and work with color, while creating glass mushrooms and a glass serpent. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

total duration 2 hours
offered 6x year | \$170



glass beads I

ages 16+ | entry level

Learn to make colorful glass beads from Effetre glass rods (a soft glass) using an oxy-propane torch. This class teaches you how to make a variety of bead shapes, introduces tools to form and alter surface patterns, and shows you how to make stringers and twistees.

total duration 15 hours
offered 4x year | \$500

glass beads II

ages 16+ | continuing

This intermediate class explores new bead making skills, tools, and materials. Shape beads into hearts, flowers, or animals. Experiment with new techniques, including drawing with stringers and creating overlapping fish scales. Learn to use silver foil, dichroic glass, and other materials to add depth and sophistication to your beads.

prerequisite: glass beads I

total duration 15 hours
offered 2x year | \$450



See upcoming
dates & times at
thecrucible.org

glass flameworked ornaments

family | entry level

After a basic introduction to melting and shaping borosilicate glass with an oxy-propane torch, create elegant, icicle-inspired ornaments and miniature candy canes ideal for holiday gifting or for your own ornament collection. As part of our Family Series, parents/guardians with children ages 12+ are welcome to register with their kids and get hands-on making ornaments—just in time for the holidays.

total duration 4 hours
offered 1x year | \$195

glass flameworked pendant

ages 16+ | entry level

After a basic introduction to melting and shaping borosilicate glass with an oxy-propane torch, create elegant, organic and beautiful pendants for holiday gifting or for your own adornment.

total duration 7 hours
offered 2x year | \$250

glass flameworking I

ages 16+ | entry level

Create beautiful glass ornaments, pendants, marbles, and more! Learn how to use tools and equipment like an oxy-propane torch to melt and shape glass. We will cover a variety of techniques including color pulling and applying, color pattern application, and marble making.

total duration 15 hours
offered 14x year | \$500

glass flameworking II

ages 16+ | continuing

In this intermediate course, we expand on the fundamentals and investigate the intricacies of borosilicate glass flameworking in more involved projects and contemporary designs. In addition to learning more progressive solid glass techniques, you will learn to use glass tubing to make blown glass perfume bottles and vessels. Color application to blown glass and annealing hollow form pieces will also be discussed.

prerequisite: glass
flameworking I

total duration 15 hours
offered 3x year | \$525

*Flameworked Ornaments by
Janet Hayes*

glass flameworking lab

ages 16+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must bring your own materials.

prerequisite: glass
flameworking I or glass beads I

total duration 20 hours
offered 10x year | \$300



hollow vessels

ages 16+ | continuing

Learn to flamework hollow glass, making unique vessels like terrariums, vases, trinket dishes, and spice jars! You will learn proper techniques for shaping and creating a stable vessel structure, as well as how to use the tools necessary to create vessels of your own design. This class is open to student exploration so have your ideas ready!

prerequisite: glass flameworking I

**total duration 15 hours
offered 1x year | \$500**

making glass beads with wine bottles

ages 16+ | entry level

Wine bottles come in many beautiful colors, but can be difficult to work with. In this class, you will learn how to safely cut bottles into smaller pieces, and how to use an oxygen-propane powered torch to melt and shape the glass into a variety of fun shapes. This is a great introduction to glass beadmaking and an exciting opportunity to transform wine bottles into personal adornment.

**total duration 5 hours
offered 2x year | \$230**

youth glass flameworking I

ages 12-18 | entry level

Create beautiful glass ornaments, pendants, marbles, and more! Learn how to use tools and equipment like an oxy-propane torch to melt and shape glass with confidence. We will cover a variety of techniques including color pulling and applying, color pattern application, and marble making.

**total duration 15 hours
offered 11x year | \$415**

youth glass flameworking II

ages 12-18 | continuing

Expand your skills working with borosilicate glass flameworking in this intermediate class. Create complex marbles, detailed sculptures, implosion pendants, and work with expert faculty on crafting unique designs. You will be exposed to theory, principles, and techniques for designing and creating independent projects. Advanced color pulling, glass compatibility, and patterning techniques will have you brimming with new ideas!

prerequisite: youth glass flameworking I

**total duration 35 hours
offered 4x year | \$800**



Fused glass by Daniel Stauber



youth soft glass beads

ages 14-18 | entry level

Learn to make colorful glass beads from Effetre soft glass rods using an oxy-propane torch. Youth will make a variety of bead shapes, stringers, and twistees and build skill using tools to form and alter surface patterns.

**total duration 15 hours
offered 1x year | \$350**

GLASS FUSING & SLUMPING

3-hour taster: glass fusing

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to glass and heat interaction, glass cutting, combining colors, firing, and annealing, create a glass mosaic of your own design. Take a Taster and meet new friends or give the gift of creativity to someone special.

**total duration 3 hours
offered 14x year | \$195**

friday flame: glass fusing

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Learn how to cut glass and the basics of the fusing process. Then, design your own unique mosaic glass tile that will be kiln fired and ready the following Monday. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

**total duration 2 hours
offered 5x year | \$170**

fused glass decals

ages 16+ | entry level

Your own photos, drawings, and images can be fused to glass. Bring a jpeg to the workshop and we will print them onto special decal paper that is then fired onto glass, becoming a permanent decoration. After firing, the decals turn sepia and colors can be added using glass powders. This workshop is designed to create art objects or memorabilia.

total duration 6 hours
offered 1x year | \$195

fused glass pendants

ages 16+ | entry level

Learn to work with fusible glass, dichroic glass, and silver foil to create beautiful pendants in this three-hour workshop. Students will be make several small glass fused pendants, and cord is provided to turn them into a necklace.

total duration 3 hours
offered 2x year | \$220



fused glass wall vases

ages 16+ | entry level

Learn how to make glass fused wall vases in a variety of colors in the kiln-formed glass technique. Each student will learn how to make pockets in two layers of glass and create a unique glass wall vase.

total duration 3 hours
offered 2x year | \$175

glass fused ornaments

family | entry level

Learn to cut glass and assemble it into beautiful hanging glass fused ornaments! Add sparkle with dichroic glass, frit, and stringers that will embellish your design. Ornaments will be kiln fired and ready for pick up the following Monday. As part of our Family Series, parents/guardians with children ages 12+ are welcome to register with their kids and get hands-on making ornaments—just in time for the holidays.

total duration 3 hours
offered 1x year | \$175

glass fusing and slumping I

ages 16+ | entry level

Enter the world of art glass! We will focus on the techniques of fusing and slumping, which offer myriad possibilities for creating with color and form. You will learn the basics of glass and heat interaction, glass cutting, fusing, and slumping. The class will cover mold types as well as firing and annealing procedures. You will explore several new processes and each week you will complete several small projects.

total duration 15 hours
offered 8x year | \$450

Fused glass by Mojgan Saberi

glass fusing and slumping II

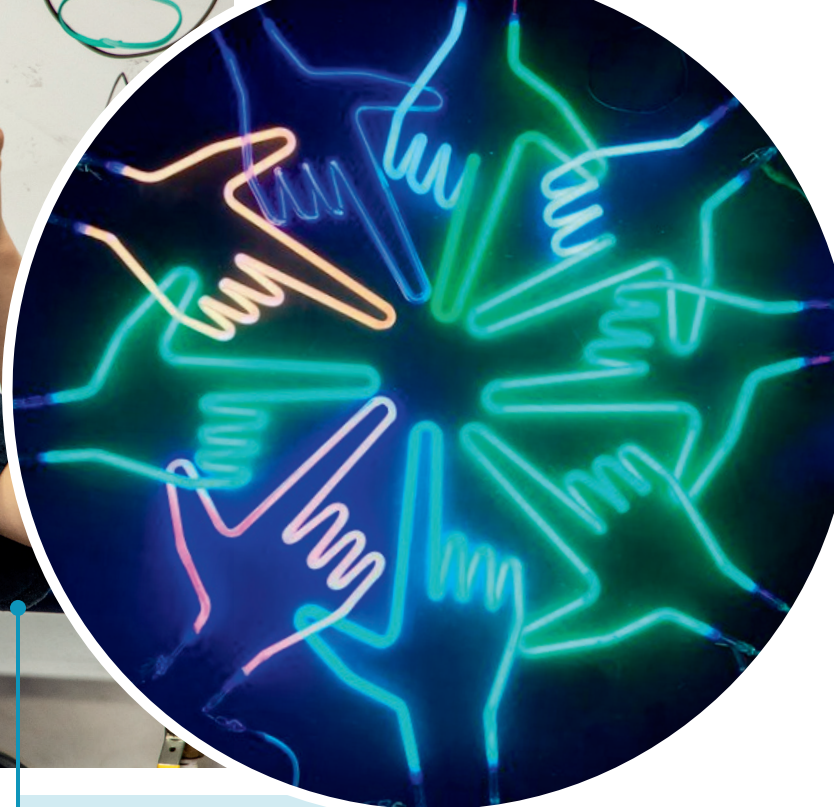
ages 16+ | continuing

This class is a great way to continue your study of glass slumping and fusing. You will design and create your own slumping molds using different materials, such as clay, fiber, and firebricks. We will discuss glass chemistry and more advanced fusing and slumping processes.

prerequisite: glass fusing and slumping I

total duration 15 hours
offered 2x year | \$425





glass fusing and slumping lab

ages 16+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials and cutting and snapping tools.

prerequisite: glass fusing & slumping I

total duration 36 hours
offered 4x year | \$450

kiln formed glass

ages 16+ | continuing

Deepen your knowledge of advanced techniques in fusing, slumping, and casting glass! Design two different open face molds, cast billet glass within to create unique relief sculptures, and experiment with the pot melt technique and the free flow pattern bar method into a mold or dam construction. Gain basic skills in glass coldworking and a deeper understanding of heat-reactive glass colors.

prerequisite: glass fusing and slumping I

total duration 15 hours
offered 1x year | \$365

youth creatures in fused glass

ages 12-18 | entry level

Create a variety of creatures and habitats in both warm and cold glass. Students will learn how to cut, shape, and embellish glass using a variety of tools, molds, and machines. 2D and 3D projects may include fused tiles, jewelry, treasure chests, wind chimes, cityscapes, toadstools, insects, and jellyfish. You will be encouraged to choose projects and create art based on your own interests.

total duration 15 hours
offered 5x year | \$440



NEON & LIGHT

neon I

ages 16+ | entry level

Light up your life with neon! In this class you will learn the skills needed to complete a project in neon and an illuminated project. In addition to hands-on instruction in tools and techniques, this class includes discussion of design and aesthetic considerations. Transformers are provided.

total duration 18 hours
offered 15x year | \$575

neon II

ages 16+ | continuing

Building on skills developed in Neon I, this class emphasizes the decisions you make in creating a unique artwork using neon illumination. Classwork includes discussion of the expanded use of color, choice of glass size, bombarding and manifold operation, self-directed sculptural conception, and construction. You will have the opportunity to complete two or three illuminated projects.

prerequisite: neon I

total duration 15 hours
offered 3x year | \$485



Neon by Camille MacRae

neon lab

ages 16+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials.

prerequisite: neon I and crucible membership

total duration 15 hours
offered 13x year | \$225

youth neon

ages 12-18 | entry level

Learn the science behind neon gases and high voltage electrical transformers as you are taught how to shape and manipulate glass tubes into letters, shapes, or figures. Bending glass in this challenging course will build hand-eye coordination and concentration skills. The goal by the end of the week is for each student to make one small, working, neon-filled luminous tube that is wired with a transformer. The piece can be taken home or incorporated into other artwork.

total duration 15 hours
offered 6x year | \$480



CAN YOU FIX A FLAT?

Understanding the basic mechanics
of your bike

story by Kristin Arzt
photos by Cathy Niland

Anyone who has ever been on a bike knows there is no faster way to ruin a ride than a broken chain or a flat tire. But our expert team in The Crucible's Bike Shop promises that bikes are one of the most straightforward machines to troubleshoot and repair! With a bit of patience, elbow grease, and expert guidance, you too can learn how to keep your two-wheeled machine on the road.

THE CRUCIBLE'S BIKE SHOP EMPOWERS OUR COMMUNITY TO STAY MOVING

The Crucible's Bike Shop has been running for over a decade in our West Oakland studio and provides training and support to our community with expert bike maintenance. Whether you want to learn the basics of a tune-up or to tig weld your own bike from the ground up, The Crucible has you covered. Understanding bike maintenance and having a safe mode of transportation is good for the environment, your health, and your wallet.

The Bike Shop has long been the community outreach arm of The Crucible.

Continued on page 42





Fuego Leader Angel Torres welcomes you to The Crucible's newly expanded Bike Shop with more than twice the square footage to support increased free community bike repair and bike maintenance training.

MAINTENANCE

HOW TO PERFORM BASIC BIKE



1 CHAINS & COG

A bike chain drives the rotation of the pedals from one cog to the next, which is attached to the rear wheel. With the help of a derailleur, the chain can align with a given gear. Bike chains are made of pairs of steel plates that are held together by rivets. A cog set is a collection of different sized gears that allow your bike to run in different gear ratios, allowing for more or less torque.



2 DERAILLEURS

Derailleurs apply variable tension to the chain, allowing it to move between gears. Shifters apply variable tension to the cable attached to the derailleur, which moves the derailleur, which then moves the chain from gear to gear. It quite literally just shoves the chain from gear to gear.



3 TIRES & WHEELS

A bike wheel translates the applied force of the rider's energy or momentum. The rider steers the front wheel, while the back wheel is driven. The wheels receive the friction of braking, resisting rotation. Bike tires come in two main styles: road bike and mountain bike. Road bike tires are usually thin, highly pressurized with minimal tread for faster, city riding. Mountain bike tires have lower pressure and are wider with a thick tread. A tire is sized to fit a certain type of wheel rim, which in turn dictates the type of tube that you need.



4 FRAMES & FORKS

A bike frame is defined by the frame build and material it is made of. Frames are commonly made from steel, carbon fiber, aluminum, alloys, and other composites. The design of a bike frame dictates the forward inertia of your bike and can be customized to the type of terrain you want to traverse and how fast you want to go. Some bikes have forks at the front to connect the front wheel to the frame and direct the steering from the handlebars.



5 PATCHING A TUBE ON THE ROAD

To patch a tube in a pinch, first find the hole by removing your wheel and take the tube out of the tire. Find the source of the flat by pushing on the inflated tube. Clean the area around the hole with an emery board or fine sandpaper. Once it is clean and dry, spread a thin layer of rubber cement in the area around the hole. Wait for the solvent in the cement to evaporate. Apply the patch to the layer of cement so the hole is centered underneath. Place the deflated inner tube on a firm smooth surface and rub the tube to create a bond between the patch and tube. Remove the backing on the patch, then dust the area around it with a small amount of chalk to neutralize the glue. Insert the tube into the tire and reinstall the bike wheel.



8 ADJUSTING YOUR BRAKES

There is a tensioner above each caliper that can be tightened or loosened to increase the brake pad's resistance. However, worn-out brake pads are usually the main issues with malfunctioning brakes. These can easily be replaced with a new set of brake pads.

6 REALIGNING AND TRUING A WHEEL

You can true a wheel by tightening or loosening the spokes. First, remove your wheel from the bike and tire from the wheel, then mount the wheel in a truing stand. If a truing stand is not available, the bike can be flipped upside down and the brake pads can be used as a rudimentary truing stand. Use a spoke wrench to slowly adjust the tension of the spoke that you notice is out of alignment. You will only want to adjust the tension of each nipple one-half turn at a time, then check the deviation again. Repeat this process until your wheel is aligned. Your wheel is adequately true if it wobbles less than 1/16 of an inch.

7 FIXING A BROKEN SPOKE

Begin by removing the wheel and tire. From there, unscrew one side of your broken spoke from the rim. Remove the other end of the spoke by sliding it through the hub eyelet. Once it is completely removed, slide the replacement spoke in. When properly installed, the spoke pattern should be consistent all the way around the wheel. Using a spoke wrench, tighten the nipple onto the spoke to match the same tension as the rest of the wheel. Finally, true the wheel, and re-install your rim tape and tire.

9 CARING FOR A BIKE CHAIN

To degrease a chain, you will need a rag and cleaning solvent—that's it! We recommend using diluted citrus solvent at a 1:1 water to solvent ratio. Start by shifting your chain into the smallest sprocket on the rear wheel of your bike. Hold the chain in place with one hand while firmly wiping the lower set of the chain with a damp rag soaked in solvent. Continue along the entirety of the chain.



After participating in The Crucible's free Earn-A-Bike Program, Angel returned this past summer to build his own art bike and support faculty in the classroom during youth camps as the first Fuego Youth Leader in the Bike Shop Department.

It serves West Oakland youth through our Earn-A-Bike program and supports the West Oakland community at large with free bike maintenance during our Bike Fix-A-Thons. For years, our Bike Shop team has dreamed of supporting entrepreneurship and career pathways for young adults. Thanks to our recently expanded shop and increased capacity, that dream has come to fruition with our first-ever Bike Shop Fuego Youth Leader, Angel Torres.

Angel, a former participant in our Earn-A-Bike program, has been using his skills at home since completing the program. "I've been working on my cousins' bikes and trying to teach them stuff that I learned," he shared. "I've worked on a lot of different people's bikes." This past summer, Angel returned to our Bike Shop to participate in our four-week long Fuego Youth Leadership program where he learned even more about bike maintenance and repair, as well as some techniques in welding. His final

project, a double-decker bike frame, is a testament to his growing skill set. Angel will be well equipped to explore a career in bike mechanics if he so chooses.

Learning technical mechanic skills in the Bike Shop at a young age opens the door to entrepreneurial pathways for Bike Shop students. "The possibility is huge to further grow the youth program and offer opportunities to learn about entrepreneurship," explains Vita Wells. "The Bike Shop programs are a powerful way to address inequality on multiple levels, ranging from transportation justice to economic justice, to enabling young people

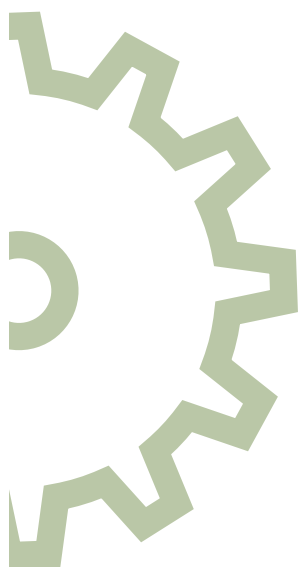
to go out and take care of themselves. It's giving our youth what they need in a big, big way."

Our recently expanded Bike Shop provides regular free bike repair for our local community and free Earn-A-Bike programs for youth ages 10-18. Each year, over 150 bikes are repaired for free giving community members—young and old—improved access to safe, reliable, and environmentally friendly transportation. 🔥

"THE BIKE SHOP PROGRAMS ARE A POWERFUL WAY TO ADDRESS INEQUALITY . . . RANGING FROM TRANSPORTATION JUSTICE TO ECONOMIC JUSTICE."



Precision is key for these areas of study, where machinists create functional work that inspires, transports, or solves technical problems for fabricators and students alike.



BIKE SHOP

bicycle maintenance

ages 16+ | entry level

Perform a complete tune up on your own bicycle! As you disassemble and reassemble the bike, you will learn core principles of bicycle mechanics, names of components, and the tools used in a professional shop. Bring your own bike to work on, or we can provide one for you. Basic supplies such as cables and chains are provided if needed, but students will need to bring any specialty tires, gears, etc. Some items may be available for sale at The Crucible.

**total duration 8 hours
offered 12x year | \$285**

build a bike frame

ages 16+ | continuing

Weld your own bike frame for a one-speed or geared bike! You will build a chrome moly steel mountain bike frame using proven geometric principles. Learn about TIG welding, brazing, machining of tubes, bicycle geometry, materials, construction techniques, fixtures, and jigs, while you complete your own unique bicycle frame. TIG Welding II or additional TIG welding experience is recommended, but not required.

prerequisite: tig welding II

**total duration 40 hours
offered 1x year | \$750**



sheet metal forming with evan wilcox

ages 16+ | entry level

Gain invaluable skills for fabricating parts for motorcycles, cars, airplanes, and sculptures. Learn how to form sheet metal into tanks, fenders, and fairings, using gas-aluminum welding, a planishing hammer, an English wheel, and hand forming tools. Class time is split between instruction and lab time where students can use Crucible equipment. You will have a chance to make your own project.

**total duration 12 hours
offered 3x year | \$695**

youth bicycle maintenance

ages 12-18 | entry level

In this weeklong camp, learn in-depth knowledge of bike mechanics, bicycle design, and how and why bikes are built the way they are. Youth students will disassemble and reassemble an entire bike, learning the names of components and tools used in professional shops. Focus on bicycle wheels, drive train, brakes, head set, and fitting. Bring in your own bike or learn on one available in The Crucible's shop. You'll ride away with a hands-on understanding of bicycle maintenance and safety.

**total duration 15 hours
offered 10x year | \$420**

youth frame alteration: art bike

ages 12-18 | entry level

Customize your bicycle in this exciting workshop! Students learn basic fabrication skills in MIG welding, plasma cutting, grinding, and finishing to reconstruct bikes. Frames will be stripped and you will learn to redesign and alter handlebars, rims, seat posts, and frames to create a unique look that will make your bike the talk of the neighborhood.

**total duration 35 hours
offered 3x year | \$900**

youth gravity cars

ages 8-11 | entry level

Build. Test. Adjust. Race! Gravity Cars is a no-rules miniature car building and racing competition on a large, undulating track inspired by the Nerdy Derby. Gravity Cars reward creativity, cleverness, and ingenuity.

**total duration 15 hours
offered 6x year | \$350**





youth skateboard building

ages 12-18 | entry level

Design and build your very own custom skateboard from seven layers of hard maple veneer. Learn woodworking techniques and the concepts of vacuum press veneering and bending wood. You will practice using basic woodworking power tools, including the band saw and power sanders, as well as hand tools, such as files, rasps, and planes. Apply a basic wood finish and set up your skateboard deck to ride.

total duration 15 hours
offered 3x year | \$575

KINETICS & ELECTRONICS

3d modeling I

ages 16+ | entry level

Learn how to design your own 3D sculptures! In this course, you will explore a variety of 3D modeling software techniques and the basic ways to construct objects.

Each student will design at least one object, which we will print and have available for pick-up by the following weekend.

total duration 15 hours
offered 1x year | \$295

arduino microcontrollers: building smart art

ages 16+ | entry level

Arduino is an open-source electronics platform based on flexible, easy-to-use hardware and software. It is perfect for artists, designers, hobbyists, and anyone interested in making intelligent creations that can sense and act in the real world. The types of sensors and actuators possible are nearly limitless! Starting with the basics, we thoroughly review Arduino's hardware and software features. Plenty of hands-on lab time deepens your understanding and enables you to create interactions of your own. An Arduino board and accessories are provided and students take home all components that are part of their final project.

total duration 15 hours
offered 5x year | \$425

demystifying the LED

ages 16+ | entry level

Learn about light emitting diodes (LEDs) and the basic circuits needed to make them work, then create luminous one-of-a-kind projects. LEDs are efficient, inexpensive, and long lasting. They vary in color, shape, intensity, and size. Students receive a complete kit of LEDs and parts to use in class and for future projects.

total duration 7 hours
offered 4x year | \$225

digital fabrication and foundry

ages 18+ | entry level

In this two-part course, you will be introduced to digital design and 3D printing using Autodesk Fusion 360 with the goal of producing a number of pieces suitable for casting in aluminum. These designs will

be 3D printed using resin, PLA, and CNC milling. With input from the instructor, you will select one of your prints to cast into aluminum using the ceramic shell process. There is an additional cost for larger pieces or to cast in bronze.

total duration 30 hours
offered 2x year | \$855



electromechanics for everything

ages 16+ | entry level

Use the simplest of electronic and mechanical components to make things spin, twitch, jump, bend, and wiggle. This class covers switches, buttons, relays, motors, servos, and solenoids. We will also explore some basic analog and digital control circuits, AC/DC current, and safety. The techniques taught in this class can be applied to almost any kind of project.

total duration 15 hours
offered 3x year | \$450

mechanical sculpture

ages 16+ | entry level

Learn how to make your creations move! This course introduces simple and complex mechanisms including gears, cams, pulleys, and linkages. You will learn how to create, convert, and control movement, along with combining these elements to get the complex motion you desire. Hands-on lab time using foam board, plastic, and wood deepen your understanding of these concepts, which you can apply to other materials. Personal projects and interests are welcomed and encouraged.

total duration 15 hours
offered 3x year | \$355



Double decker bike by Fuego
Youth Leader Angel Torres

youth arduino microcontrollers

ages 12-18 | entry level

Learn to program an Arduino Microcontroller to turn commands into actions! Arduino is an open-source electronics platform based on flexible, easy-to-use hardware and software. Youth can program their creations to sense and act in the real world using motors, lights, or sounds. An Arduino board and accessories are provided. Students take home all components that are part of their final project.

**total duration 15 hours
offered 2x year | \$440**

youth gizmos

ages 8-11 | entry level

Learn kinetic techniques to design, engineer, and construct a mechanical sculpture, contraption, or gadget with lights and moving parts. Using new and salvaged components, you will learn how motors, lights, and switches work, how to create mechanical structures, how to create different types of motion, and how to incorporate switches to operate your very own fantastical contraption!

**total duration 15 hours
offered 8x year | \$375**

youth robotics I

ages 12-18 | entry level

Build a simple remote-controlled robot. From the wheels up, you will create your robot's shape and personality from salvaged components, mechanisms, and electrical components. Learn soldering, mechanical construction techniques, and how to remove and repurpose these items.

**total duration 15 hours
offered 4x year | \$400**



youth robotics II

ages 12-18 | continuing

Youth students dive deeper into robotics, constructing mini-sumobots that can find their opponents and push them out of the competition ring. Students learn to build circuits by identifying components, assembling a circuit board, and soldering parts together. We will build the chassis of our sumobots with simple materials, adding motors and sensors to help the bots move and navigate.

prerequisite: any youth kinetics class

**total duration 35 hours
offered 2x year | \$800**



Shop classes
online at
thecrucible.org

MACHINE SHOP

fundamentals of machine shop

ages 18+ | entry level

Learn the fundamentals of Machine Shop theory and practice! Over this two day course, you will be provided with a detailed handout packet and make a small project using basic machine tools, including the horizontal and vertical band-saws and the drill press.

**total duration 15 hours
offered 3x year | \$385**

machine shop lab

ages 18+ | continuing

Lab sessions are a great benefit! Practice the skills you learned in class and explore new possibilities with your craft, or work on a personal project. No instruction is provided during lab sessions, but a lab monitor will be present to answer questions, manage safety, and provide overall support. You must provide your own materials.

prerequisite: turning and milling and a current crucible membership

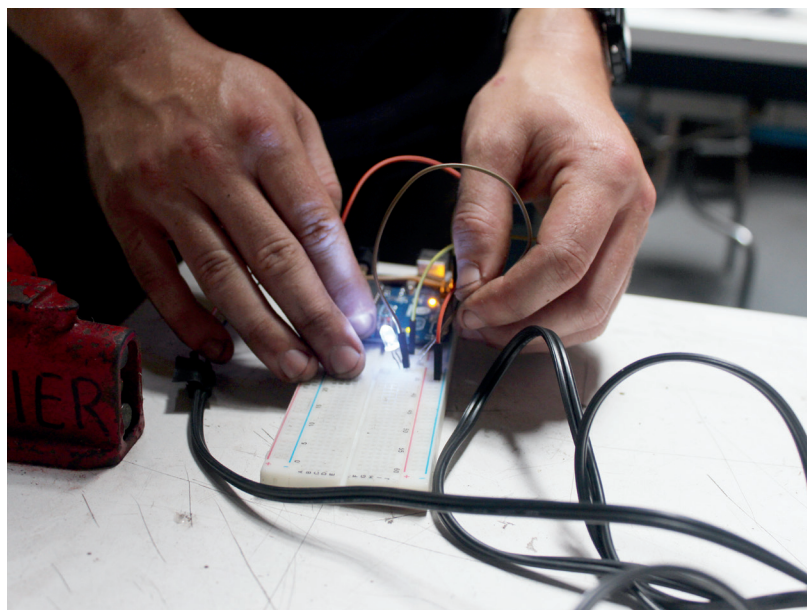
**total duration 15 hours
offered 4x year | \$375**

turning and milling

ages 18+ | entry level

Learn to fabricate metal parts using the lathe and vertical milling machine. Instruction includes machine design and operation, materials, blueprint reading, cutting feeds and speeds, tooling and precision measurement. The mill and lathe are the cornerstones of any machine shop and can produce pieces with great precision, repeatability, and accuracy. The goal of this class is to explore the capabilities and scope of these versatile machines through a series of machined projects in aluminum, brass, and steel.

**total duration 30 hours
offered 9x year | \$785**





Iron smelting expert Jeff Pringle shows off the handbuilt ceramic furnace used to smelt iron from sand during a community smelt.



HOW TO SMELT IRON

Crucible community transforms sand into iron

story by Kristin Arzt
photos by Evan Spiler & Kristin Arzt

It's not everywhere that you can watch expert blacksmiths transform sand into iron. But at The Crucible, our Blacksmithing Department came together to do just that. A team of over twenty smiths worked to build their own bloomery furnace, then transformed pounds of magnetite sand into usable iron for a large, community sculpture.

Smelting is the process of extracting base metals from ore with heat. Chemical reactions inside the bloomery separate out the other elements, until you are left with a hunk of forge-ready iron.

"Smelting iron takes a village," Blacksmithing instructor Celeste Flores explained. And with the goal of producing

over 25 pounds of iron from sand, the blacksmithing department called on instructors, staff, volunteers, students, studio managers, and department heads for support.

"Many hands make light work," Blacksmithing instructor Jeff Pringle told us of the process. "This smelt was really representative of our greater community. I've done this with one or two other people and, boy, is it a lot of work! If you have twenty or thirty people involved, even just passing through momentarily, you can feel the community coming together."

This team worked collaboratively to smelt iron into a commemorative 100-pound fire pit, supported by steel repurposed from



For an extra challenge, here the Blacksmithing Department uses a traditional accordion bellows instead of electric fan to supply oxygen to inside of the furnace.

"SMELTING IRON TAKES A VILLAGE."

the old eastern span of the Bay Bridge. How exactly did they do it? Let's start with the basics.

WHAT IS IRON ORE?

Iron ores are rocks and minerals rich in iron oxide that can produce metallic iron when smelted. Due to the nature of the iron oxide present in iron ore, they can range in color from dark grey to a deep red. The iron in such ores is commonly found in the form of magnetite, hematite, goethite, limonite, and siderite.

The magnetite present in Bay Area beaches comes from the erosion of igneous rocks in the Sierra Nevada mountains. It is carried from the San Joaquin and Sacramento rivers, which meet in the delta and flow through San Francisco Bay. It is most easily spotted in areas with high wave energy because magnetite is heavier than silica sand.

STEP 1: GATHER IRON ORE

Iron ore can be bought or gathered, but our blacksmithing team gathered the ore themselves. The best time to collect iron

ore is in the winter because the ocean is more active. Active waves separate the black, magnetic sand from lighter silica sand. This magnetic sand contains an iron ore called magnetite, which creates iron when combined with carbon. You can separate the magnetite from the silica sand by using a magnet. While rare earth magnets work best, you can actually use any kind of magnet to separate out the ore. As you might imagine, iron ore is heavy, so collecting it locally and with a group of people makes it easier. Make sure to check with your local authorities on where you can legally collect iron ore.

STEP 2: BUILD THE FURNACE

The furnace, also called a bloomery, is used to heat up the iron ore along with a chemical reducing agent (charcoal). A traditional bloomery doesn't generate enough heat to fully melt the ore. Instead, the ore melts to a spongy mass that will need to be further refined through hammering.

Our Blacksmithing Department's bloomery furnace was built with a whopping 350 pounds of clay and decorated

with scenes from the ocean to reflect the source of the iron ore. "Most people who build the smelters put a little magic into them by doing sculptural work. The decorations are believed to add a good luck or a spiritual component to the iron smelt," Jeff explained. Celeste Flores, one of our blacksmithing instructors who also practices ceramics, built the furnace using a method similar to building a coil pot, first forming large coils, then slipping and scoring each coil to bring it all together.

STEP 3: PREP THE REDUCING AGENT

In order to extract iron out of iron ore, a reducing agent is needed along with heat. Charcoal is a great and cheap reducing agent, and that's what our blacksmithing team used in their iron smelt.

Charcoal must be broken down into smaller, more manageable pieces before being added to the bloomery. This is one of the more labor intensive jobs in the smelting process.

"The smelt itself draws people in, even if they are stuck with the job of bashing



Molten slag is let out during the smelting process to eliminate impurities in the iron bloom.

several hundred pounds of charcoal and are filthy by the end of the day,” Jeff Pringle told us. Our team used mesquite and oak charcoal, the most commonly available type of charcoal in the United States.

Once broken into smaller pieces, the charcoal and iron ore (sand) are mixed together in a 1:1 ratio.

STEP 4: CHARGE THE FURNACE AND HEAT THE IRON ORE

Before adding the iron ore and charcoal mixture, the furnace must be charged. Charging a furnace simply means heating it up to temperatures high enough for smelting to occur. The Crucible team used charcoal to bring the temperature inside of the furnace up to a consistent running temperature, alternating by adding one kilogram each of charcoal and ore every five minutes. They did this for six hours in shifts.

Inside the furnace, the combustion of charcoal releases carbon that reduces the iron oxides into metallic iron. The temperature and ratio of charcoal must be carefully controlled to keep the iron from



Fire escapes from the top of the handbuilt ceramic furnace as it heats the iron ore inside during the smelt.



**“THE SMELT ITSELF
DRAWS PEOPLE IN,
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CHARCOAL AND ARE
FILTHY BY THE END
OF THE DAY.”**

absorbing too much carbon and getting too brittle. At the bottom of the furnace, the charcoal, which is mostly carbon, sucks oxygen from the air to create a hot furnace. The base of the furnace becomes fuel-rich and the carbon, hungry for oxygen, begins to pull oxygen from the iron ore. Particles of iron fall to the bottom of the furnace and combine with molten slag, also called a “bloom.” At the end of the smelt, blacksmiths carefully extract the bloom from the bloomery, then begin further refinement in a forge to remove the remaining impurities.

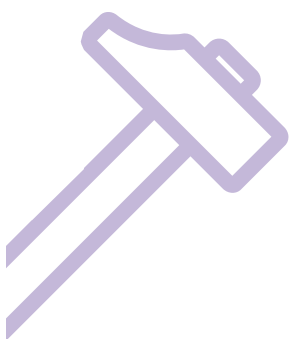
STEP 5: APPLY THE FINISHING TOUCHES

Crucible blacksmiths reheated the bloom in the blacksmithing forge, then beat it with a hammer to drive out any molten slag and purify the iron. The resulting material is a low carbon iron. Its low carbon content makes the material easier to work with, and will make for a beautiful material to forge a unique sculpture! 🔥

Blacksmithing Department Head Chris Niemer used the power hammer to condense the bloom into a forgeable and useable iron.



Forging, welding, soldering, casting—metalworking encompasses all the ways artists work to transform and manipulate metal into functional furniture, ornamental cast bronze, delicate jewelry, and so much more.



BLACKSMITHING

3-hour taster: blacksmithing

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to forging steel and using blacksmithing tools, make a steel hook to take home. Take a Taster and meet new friends or give the gift of creativity to someone special.

**total duration 3 hours
offered 20x year | \$195**

blacksmithing I

ages 16+ | entry level

Learn the basics of blacksmithing! This class teaches the fundamental skills needed to forge steel and understand blacksmithing tools. We will introduce tapering, upsetting, flattening, dishing, and bending of hot steel. Students make small projects, such as spoons, knives, forks, and hooks. Offered in a co-ed and womxn-only format.

**total duration 15 hours
offered 25x year | \$470**



Scholarships
available for low-
income BIPOC
youth & adults

blacksmithing II

ages 16+ | continuing

Deepen your knowledge in this sequel to Blacksmithing I. This class is designed to develop your basic skills along with techniques including scroll-making, collaring, basic tool-making, and heat-treating. You will gain the skills needed to move on to more advanced classes like Bladesmithing and Techniques in Ornamental Iron Work.

prerequisite: blacksmithing I

**total duration 15 hours
offered 9x year | \$470**



blacksmithing lab

ages 16+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials.

**prerequisite: blacksmithing I
and crucible membership**

**total duration 15 hours
offered 8x year | \$200**

bladesmithing

ages 16+ | continuing

This specialized course focuses on the forging techniques needed to produce sharp-edged tools of high-carbon steel. We will cover blade design, control of steel grain structure, hardening and tempering methods, steel finishes, and handle construction. Emphasis is on learning the fundamental skills needed to forge a good knife.

prerequisite: blacksmithing II

**total duration 30 hours
offered 2x year | \$655**

forge welding

ages 16+ | continuing

For centuries, forge welding was the only way to weld steel and iron, most commonly being used for pattern welding blades and knives. Now, you can deepen your blacksmithing skills in this class that covers all the fundamentals of this traditional craft. Learn the process of repeatedly drawing out a billet of steel, then folding it back and welding it upon itself. This class is also your introduction to the power hammer.

prerequisite: blacksmithing II

**total duration 15 hours
offered 2x year | \$485**

forge your own blacksmithing tools

ages 16+ | continuing

Create your own blacksmithing tools! You will make a punch and learn how to use it to punch the eye on a hammerhead. You will learn techniques in double striking and heat-treating, and be introduced to the power hammer. Students make two essential tools of the trade for your personal use.

prerequisite: blacksmithing II

**total duration 15 hours
offered 2x year | \$485**



forms from nature

ages 16+ | continuing

Use traditional blacksmithing techniques to create organic forms for use on functional objects or sculptures. Learn to make tools to create your own designs and how to improvise when forging.

prerequisite: Blacksmithing I

**total duration 15 hours
offered 1x year | \$400**

friday flame: blacksmithing

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Learn to flatten, taper, bend, twist, and oil forged steel into your own hand-forged bottle opener. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

**total duration 2 hours
offered 5x year | \$170**



Get notified
when classes
go on sale at
thecrucible.org

power hammer I

ages 16+ | continuing

We will focus on power hammer techniques as we forge a set of basic hammer tools, side sets, and a round-back flatter. By the time these new tools are heat-treated, students will go a long way towards mastering the skill set. Emphasis will be on the safe and effective operation and maintenance of the hammer.

prerequisite: blacksmithing II

**total duration 15 hours
offered 2x year | \$620**



techniques in ornamental iron work

ages 16+ | continuing

Take your skills to the next level and begin producing work that sells! This class covers traditional decorative ironwork methods and introduces the power hammer. You will explore techniques, such as steel carving, fulling, and riveting, to create an ornamental dragon.

prerequisite: blacksmithing II

**total duration 15 hours
offered 1x year | \$455**

youth blacksmithing I

ages 12-18 | entry level

Learn to bend and shape steel in The Crucible's smithy as you practice traditional blacksmithing techniques, such as drawing, bending, twisting, punching, slitting, and drifting using the forge and anvil. Students will learn to forge with confidence and complete projects such as a bracelet, hook, fork, and spoon.

**total duration 15 hours
offered 12x year | \$470**

youth blacksmithing II

ages 12-18 | continuing

Learn to bend and shape steel in The Crucible's smithy as you dive deeper into traditional blacksmithing techniques, such as drawing, bending, twisting, punching, slitting and drifting, using the forge and anvil. You will also be exposed to theory, principles, and extensive techniques that let you design and create your own independent projects.

prerequisite: youth blacksmithing I

**total duration 35 hours
offered 2x year | \$800**

FOUNDRY

3-hour taster: foundry

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to creating sand molds, craft your own mold for a small aluminum tile or medallion, then watch our faculty pour molten aluminum into your piece. Take a Taster and meet new friends or give the gift of creativity to someone special.

**total duration 3 hours
offered 11x year | \$195**





bell casting

ages 16+ | entry level

Bell Casting introduces participants to bell design and the lost wax foundry technique. Each student will design, cast, and finish a bell approximately six inches in diameter. This entry level class will provide a foundation for further exploration in this versatile foundry approach.

**total duration 32 hours
offered 1x year | \$650**

cast ornaments

family | entry level

Create festive ornaments from cast aluminum! Carve your designs into resin bonded sand to make a sand mold, then watch as molten aluminum is poured to fill your mold. When the metal has cooled, learn finishing and coloring applications to make your ornament pop! As part of our Family Series, parents/guardians with children ages 12+ are welcome to register with their kids and get hands-on making ornaments—just in time for the holidays.

**total duration 4 hours
offered 1x year | \$210**

design and make your own waffle iron

ages 16+ | entry level

Each student will create a 7" diameter stovetop waffle iron with a waffle pattern of your own design. We will make sand molds and use a cupola furnace to melt the iron. At the spectacular iron pour event, students prepare iron and coke charges, operate the cupola, and pour molten iron into their new mold.

**total duration 32 hours
offered 1x year | \$595**

foundry fundamentals

ages 16+ | entry level

Begin your exploration of metal casting with this hands-on overview of foundry processes, including wax sculpting, lost wax casting, ceramic shell, sand moldmaking, casting, and finishing. You will help pour molten metal and complete several cast-metal sculptures or utilitarian objects.

**total duration 32 hours
offered 3x year | \$635**



foundry I: ceramic shell process

ages 16+ | entry level

Ceramic shell is a mold material used in the lost wax casting method. Learn basic wax-working techniques and explore basic metal finishing in this fascinating course. You will create a wax sculpture and build ceramic shell molds, transforming your original wax piece into bronze or aluminum. Outside class time is required, as well as additional fees for wax, shell, and bronze.

**total duration 30 hours
offered 3x year | \$750**

foundry II: ceramic shell process

ages 16+ | continuing

This class is for people with metal casting experience who have completed waxes to cast. We can also accommodate 3D printed PLA (best unpigmented). Students will prepare their patterns, gate them, build the ceramic shell mold, cast in either bronze or aluminum, destroy the mold, and remove the gates. NOTE: Outside class time is required, as well as additional fees for wax, shell, and metal.

prerequisite: foundry fundamentals or foundry I

**total duration 15 hours
offered 3x year | \$435**

foundry lab

ages 16+ | entry level

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You are free to come and go at your convenience during open lab hours, and additional consumable materials may be purchased from The Crucible onsite.

prerequisite: any ceramic shell class and department head approval

**total duration 40 hours
offered 4x year | \$775**





iron casting

ages 16+ | entry level

In this course, you will complete a finished iron sculpture. You will explore mold construction and preparation while building your own sand mold with resin-bonded sand. Learn the steps required to prepare the cupola for an iron pour. At the spectacular iron pour event, students prepare iron and coke charges, operate the cupola, and pour molten iron into their new mold.

total duration 32 hours
offered 1x year | \$460

youth adventures in sand casting

ages 12-18 | entry level

In this introduction to foundry processes, turn your ideas into cast-metal sculptures! You will create both open-faced and closed sand molds, then learn to pour molten aluminum with the help of your classmates. Once cooled, apply coloring and finishing techniques, then leave with a unique, finished sculpture you cast yourself!

total duration 15 hours
offered 5x year | \$425

JEWELRY

3-hour taster: jewelry

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to annealing, texturing, stamping, filing, sanding, polishing, and design, create a small metal pendant or keychain to take home. Take a Taster and meet new friends or give the gift of creativity to someone special.

total duration 3 hours
offered 13x year | \$195

boxes, lockets, and hinges

ages 16+ | continuing

Students learn to create multiple hollow forms for use in jewelry, boxes, and lockets. Working in copper, brass, nickel, and silver, students incorporate movement into their pieces through hinges and learn to use handmade plastic dies with the hydraulic press. Final project is a lid-fitted box and a locket.

prerequisite: jewelry & metals II
total duration 15 hours
offered 1x year | \$330



casting organics and found objects

ages 16+ | continuing

In this exciting course, you will expand your jewelry knowledge by making castings of unique items from organics, plastics, or styrofoam forms. Students will do two casting burnouts, pour molten metal, and file, polish, and finish one-of-a-kind creations.

prerequisite: casting wax to silver

total duration 24 hours
offered 2x year | \$435

casting wax to silver

ages 16+ | entry level

Learn the ancient process of lost wax casting sculptural jewelry. Experimenting with different types of wax, you will carve, cast, and finish at least one small fetish, pendant, or ring in silver. Students are encouraged to bring in personal sketches and ideas. Bronze is also available.

total duration 15 hours
offered 7x year | \$500



See upcoming dates & times at thecrucible.org

chasing and repousse

ages 16+ | continuing

Learn two ancient metalworking techniques for creating dimension and endless detail, by hammering sheet metal into three-dimensional reliefs. Working with two-inch squares of copper and using simple motifs of your choice, you will learn to isolate and control the unique properties of sheet metal to form a realistic relief in your original piece. With chasing and repousse you can bring images to life that will accent your sculpture, clothing, furniture, or jewelry with fine detail, texture, and depth.

prerequisite: jewelry & metals I

total duration 15 hours
offered 2x year | \$425



Butterfly crown and star mask by Leslie Kwok



elegant stacking rings

ages 16+ | entry level

Learn basic soldering and metalworking techniques to make a set of stackable rings from sterling silver, copper, brass, and gold fill. You will leave with several stylish rings for yourself or to give as gifts.

**total duration 3.5 hours
offered 4x year | \$245**

exploration in chainmaking

ages 16+ | entry level

This class covers the classical skills needed to make woven and Etruscan chains. You will learn to manipulate wire through the selected use of hand tools, making jump rings, splicing wires together, and fusing jump rings shut. Your finished one-of-a-kind silver chain can accommodate an original pendant or be worn alone.

**total duration 15 hours
offered 2x year | \$425**

family baubles and bling

family | entry level

In family groups, you will learn to make customized and engraved pendants by creating a collage pattern encased with plexiglass and copper. Then work together to create decorative polymer clay baubles that may be used as ornaments, window hangings, or accessories. This workshop is designed for children ages 5-7 with accompanying adult(s).

**total duration 2 hours
offered 1x year | \$20**

friday flame: jewelry

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Join us for Friday Flame, a unique night focused on industrial arts and good company. Enjoy a two-hour workshop, annealing, sawing, and stamping your own custom copper charms and pendants. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

**total duration 2 hours
offered 3x year | \$170**



jewelry and metals I

ages 16+ | entry level

Learn the basics of jewelry making. We will focus on sawing, filing, sanding, soldering, texturing, annealing, stamping, polishing, and design. Students will learn the properties of metals like copper, brass, and silver and make a sterling silver ring.

**total duration 15 hours
offered 20x year | \$450**

jewelry and metals II

ages 16+ | continuing

Further develop your basic metalsmithing skills. We will teach disk cutting and doming, bezel setting, three types of rivets, and further design techniques. In addition to technical reference samples, you will create an original piece of jewelry of your own design using a cabochon stone.

prerequisite: jewelry and metals I

**total duration 15 hours
offered 6x year | \$450**

jewelry lab

ages 16+ | continuing

Taking a lab is a great way to practice and perfect the skills you learn in class. In labs, you can work on class assignments or your own projects. Lab time is supervised, but does not include instruction or materials.

prerequisite: any 15+ hour jewelry class plus a crucible membership

**total duration 15 hours
offered 7x year | \$295**





metal clay forms from nature

ages 16+ | entry level

Create beautiful fine silver jewelry such as pendants, earrings, or charms from real leaves using metal art clay and paste! Learn how to properly apply metal art clay to organic materials, as well as various finishing, filling, patina, and burnishing techniques that help bring out shine or dimension in your organic created jewelry.

**total duration 7 hours
offered 1x year | \$290**

metal clay pendants and earrings

ages 16+ | entry level

Create pendants, earrings, and wearable sculptures from copper and silver metal clay, practicing and perfecting a variety of rolling, texture, applique, and carving techniques. Kiln fire each piece, then finish and polish your beautiful fine metal creations to be the envy of all!

**total duration 15 hours
offered 3x year | \$410**

metal clay rings

**ages 16+ |
entry level**

Create and design multiple rings from copper and silver metal clay, practicing a variety of rolling, texture, applique, and carving techniques. Kiln fire each piece, then finish and polish your newly fashioned fine metal rings!

**total duration 15 hours
offered 2x year | \$410**

metal clay skulls

ages 16+ | entry level

Using silver metal clay, create fine metal skulls using a variety of rolling, texture, applique, and carving techniques. Kiln fire your designs, then polish your ornate pieces in time for Halloween! This class is designed for all, with more complex techniques covered for advanced artists.

**total duration 7 hours
offered 2x year | \$230**



Skulls by Michael Marx

silver soldering

ages 16+ | entry level

Learn the basics of soldering with silver! We will cover different types of joints, solders, and fluxes, as well as how to overcome challenges when working with rings, jump rings, posts, bezels, and more. You are welcome to bring your own small projects and you will leave the class with multiple samples.

**total duration 7 hours
offered 1x year | \$175**



stone setting

ages 16+ | continuing

Develop your stone setting skills by learning techniques for stones of all shapes and sizes! You will learn the prong, tube, and flush settings using sterling silver. Stones are supplied, but students are also welcome to bring their own.

**prerequisite: jewelry & metals I
or silver soldering**

**total duration 10 hours
offered 1x year | \$335**



**Members get
10% off all
classes**



woven wire jewelry

ages 16+ | entry level

Spend a weekend weaving wire into beautiful works of wearable art. When properly softened, wire can be used to emulate thread and then woven into jewelry, basketry, woven tapestries, clothing, and more! You will learn to manipulate copper and brass wire—changing the size, shape, and hardness to fit your needs. Then using basic weaving patterns, you will create a bracelet, pendant, or ring of your own design.

**total duration 13 hours
offered 2x year | \$350**



youth casting wax to silver

ages 12-18 | entry level

Learn the lost wax casting process, an age-old sculptural jewelry-casting process that involves creating a model out of wax, encasing that model in plaster, then casting the form in metal. You will experiment with different types of wax to create at least one pendant or ring in silver or bronze, relying on techniques and tools that date back to ancient times. Bring your sketches and ideas for jewelry.

**total duration 15 hours
offered 2x year | \$500**

youth chibi: miniature figurines

ages 8-11 | entry level

Learn the basics of preparing, shaping, sculpting, cane making, and baking polymer clay. Use brightly colored clay to make small sculptures known as chibis, incorporating them into wearable objects. You will leave this class with small memorable objects and unique self-made accessories with pride!

**total duration 15 hours
offered 5x year | \$375**

youth jewelry and metals I

ages 12-18 | entry level

Make a fashion statement! Using copper, silver, and other nonferrous metals, you will learn jewelry and metal art skills to create trendy jewelry of your own design. In this hands-on class, you will be taught filing, sanding, texturing, and polishing techniques used in creating metal jewelry. You will leave this class skilled in jewelry making, wearing a project of your own design!

**total duration 15 hours
offered 5x year | \$400**

youth jewelry and metals II

ages 12-18 | continuing

Further develop your basic metalsmithing skills. We will teach disk cutting and doming, bezel setting, three types of rivets, and further design techniques. In addition to technical reference samples, you will create an original piece of jewelry of your own design using a cabochon stone.

prerequisite: youth jewelry and metals I

**total duration 35 hours
offered 1x year | \$800**

youth kandi cuffs and perlers

ages 8-11 | entry level

Learn a variety of beading techniques to create unique and personal accessories. Students will use Pony Beads to create jewelry and accessories known as Kandi Cuffs/Mask/Charms, then personalize their work with their Perler creations or small objects brought in from home.

**total duration 15 hours
offered 3x year | \$350**

youth metal clay

ages 12-18 | entry level

Explore the fun and flare of fine silver and copper metal clay! Create pendants, earrings, and wearable sculptures using rolling, texture, applique, and carving techniques. Kiln fire each piece, then finish and polish your new bling.

**total duration 15 hours
offered 1x year | \$435**

youth woven wire jewelry

ages 14-18 | entry level

Take a class in the merging of textiles and jewelry with our woven jewelry course! Learn basics of weaving, braiding and looping for bracelets, necklaces, earrings, and other wearable items.

**total duration 15 hours
offered 1x year | \$325**





Welded sculpture by Fuego
Youth Leader Tobias Classen



creative cold connections

ages 16+ | entry level

Explore creative alternatives to joining metals without welding! Students will focus on cold and mechanical connections in their many forms, adopting techniques from other fields like woodworking and jewelry. Perfect for sculptors, tinkerers, furniture builders, and anyone interested in experimenting with new and creative methods of metal fabrication.

total duration 24 hours
offered 1x year | \$500

WELDING

3-hour taster: arc welding

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to stick welding, try your hand at creating a welded, geometric paper weight to take home or give as a gift. Take a Taster and meet new friends or give the gift of creativity to someone special.

total duration 3 hours
offered 12x year | \$195

3-hour taster: mig welding

ages 16+ | entry level

3-Hour Tasters are a great way to explore a new art form without the deeper commitment of a full course. After a basic introduction to metal inert gas (MIG) welding, plasma cutting, and fabrication processes, create a small metal sculpture to take home. Take a Taster and meet new friends or give the gift of creativity to someone special.

total duration 3 hours
offered 28x year | \$195

arc welding I

ages 16+ | entry level

Learn to join pieces of metal using arc welding, also known as stick welding. Instructors teach you to slice through metal with the hot flame of an oxyacetylene torch, and to use power and hand tools to finish your work. You'll make a small sculpture to take home.

total duration 15 hours
offered 13x year | \$445



See upcoming
dates & times at
thecrucible.org

exploring welding

ages 16+ | entry level

Can't decide what type of welding to take? Explore the varied possibilities of oxy-acetylene, arc/stick, metal inert gas (MIG), and tungsten inert gas (TIG). You will get the chance to try all four, gaining an understanding of which type of welding is most appropriate for the projects you want to complete.

total duration 8 hours
offered 4x year | \$315

friday flame: mig welding

ages 16+ | entry level

End the workweek with fire, friends, and a toast! Familiarize yourself with welding equipment and basic skills, then try welding words or creative patterns on steel. After class, enjoy wine, beer, or a non-alcoholic beverage and marvel at your new masterpiece!

total duration 2 hours
offered 6x year | \$170

arc welding II

ages 16+ | continuing

In this course, students will learn advanced joints, welding positions, and techniques in arc welding and oxy-acetylene torch cutting to take their sculptural ideas to the next level. Students will also be introduced to new fabrication tools and finishing techniques to give their sculpture a more polished and professional appearance.

prerequisite: arc welding I

total duration 15 hours
offered 2x year | \$425



Welded Turtle by Fuego Youth Leader Elisa McCormick



metal furniture fabrication

ages 16+ | continuing

Fabricate one-of-a-kind metal furniture for your home! Going beyond basic MIG welding, this course focuses on designing and fabricating functional and aesthetically interesting benches, coffee tables, flower stands, cabinets, wheeled furniture, shelves, coat racks, and just about any other piece of furniture you might like to fabricate. Projects will be evaluated for feasibility and cost, given the time frame. Be prepared to weld and cut on the first day as a review.

prerequisite: mig welding I

**total duration 24 hours
offered 1x year | \$675**

mig and tig welding lab

ages 18+ | continuing

Labs are a great benefit exclusive for Crucible members! Practice the skills you learn in class and explore new possibilities with your craft. No instruction is provided, but a lab monitor will be present to answer questions, manage safety, and provide support. You must provide your own materials.

prerequisite: mig welding or tig welding I and crucible membership

**total duration 15 hours
offered 4x year | \$155**

mig welding

ages 16+ | entry level

MIG (metal inert gas) is the most common type of modern welding. It is a process by which a welding machine focuses electricity along a moving metal wire that is fed through a hose to a handheld torch. Student welders manipulate this torch as the electricity melts the wire and creates a weld. You will learn about the fundamentals of MIG welding, such as metallurgy, preparation, joints, technique, and safety. We will also cover plasma torch cutting. The class begins with a basic, technical welding exercise, then transitions into a small creative project. Offered in a co-ed and womxn-only format.

**total duration 15 hours
offered 24x year | \$455**

oxy-acetylene welding

ages 16+ | entry level

Welding with heat produced by burning gases is one of the oldest methods of welding, dating back to ancient Greece. In this course, students will be introduced to the gas burning torch, learning to control gases and use heat to cut, braze, and weld steel. The class begins with a collection of technical exercises and finishes with a small creative project all in mild steel.

**total duration 15 hours
offered 2x year | \$425**

sculpting with steel

ages 16+ | entry level

Learn how to weld steel sculptures in this creative skill-building & project-making class. Using the MIG Welder, the Plasma Cutter, and the Oxy/Acetylene Torch you will bring scrap metal (provided) to life. Create garden ornaments, wall hangings, freestanding art, or that puppy dog sculpture you've always wanted. Learn how easy it is to bend, cut, fold, or roll steel using our entry-level fabrication equipment and develop your feel for steel with instruction in hands-on techniques and power grinding and finishing tools. Three weeks of tool and skills instruction followed by five weeks of project building.

**total duration 24 hours
offered 1x year | \$650**

tig welding I

ages 16+ | entry level

TIG (Tungsten Inert Gas) or GTAW (Gas Tungsten Arc Welding) is the type of welding commonly used for delicate work and non-ferrous metals. It uses an AC/DC power source, a non-consumable tungsten electrode, and inert gas to form an arc and create a weld. Using cold-rolled steel, this course starts with a series of small exercises and progresses into a challenging technical project, giving students a foundation in basic metallurgy, preparation, joints, technique, and safety. Offered in a co-ed and womxn-only format.

**total duration 15 hours
offered 22x year | \$455**



tig welding II

ages 16+ | continuing

This class expands on the basic skills taught in TIG Welding I. Students will be given a series of technical exercises designed to improve their focus and control, review joint types, positions, and beads, and introduce them to new fabrication tips and techniques. Students will venture into TIG welding other types of metals, with an emphasis on aluminum and stainless steel. This class prepares you to work on your own.

prerequisite: tig welding I

**total duration 15 hours
offered 5x year | \$455**

**Forged steel bird
by Celeste Flores**

Auctioned off
during our annual
Fire & Light Soriée
Gala and Fundraiser





wind chimes

ages 16+ | entry level

Create your own welded wind chime! Students will weld a metal rectangular wind chime box, plasma cut their unique design on the sides, and hang steel chain, hooks, and cut metal pieces to create a unique and eye-catching wind chime. Then all you need is wind for a gorgeous visual and tonal work of art.

total duration 12 hours
offered 1x year | \$440

youth arc welding

ages 12-18 | entry level

Learn to fuse, cut, bend, and shape metal. This intensive introduction to stick welding, also known as arc welding, and oxy-acetylene torch cutting is taught by a technical pro. In-depth demonstrations and guidance will be given on the safe and effective operation of welding equipment as instructors help you create a small welded sculpture or project.

total duration 15 hours
offered 13x year | \$475

youth arc welding I

ages 12-18 | entry level

Learn to fuse, cut, bend, and shape metal. This intensive introduction to stick welding, also known as arc welding, and oxy-acetylene torch cutting is taught by a technical pro. In-depth demonstrations and guidance will be given on the safe and effective operation of welding equipment as instructors help you create a small welded sculpture or project.

total duration 15 hours
offered 8x year | \$455

youth arc welding II

ages 12-18 | continuing

Learn to fuse, cut, bend, and shape metal in this continuing intensive in stick/arc welding and oxy-acetylene torch cutting. Guidance will be given on the safe and effective operation of welding equipment. You will also be exposed to theory, principles, and extensive techniques that let you design and create your own independent projects.

prerequisite: youth arc welding I

total duration 35 hours
offered 2x year | \$800

youth mig welding

ages 12-18 | entry level

MIG (metal inert gas) is the most common type of modern welding. It is a process by which a welding machine focuses electricity along a moving metal wire that is fed through a hose to a handheld torch. Student welders manipulate this torch as the electricity melts the wire and creates a weld. You will learn about the fundamentals of MIG welding, such as metallurgy, preparation, joints, technique, and safety. We will also cover plasma torch cutting. The class begins with a basic, technical welding exercise and transitions into a small creative project.

total duration 15 hours
offered 9x year | \$460



Scholarships
available for low-
income BIPOC
youth & adults

youth tig welding I

ages 14-18 | entry level

TIG (tungsten inert gas) welding is a highly precise method of welding that makes clean and focused welds on everything from super-thin to very thick materials. You will learn the basics of TIG welding by working with mild steel. You will create sculptures that allow you to put your creativity and welding skills to use!

total duration 15 hours
offered 6x year | \$455

youth tig welding II

ages 14-18 | continuing

TIG (tungsten inert gas) welding is a highly precise method of welding that makes clean and focused welds on everything from super-thin to very thick materials. You will continue developing TIG welding techniques by working with mild steel. You will also be exposed to theory, principles, and extensive techniques that let you design and create your own independent projects.

prerequisite: youth tig welding I

total duration 35 hours
offered 2x year | \$800



Bench by Warren Breslau
Auctioned off during our annual Fire & Light Soirée Gala and Fundraiser

8

WAYS TO MAKE THE CRUCIBLE YOURS

As the largest industrial arts education nonprofit in the country, there are a number of different ways to get involved in our mission to make the industrial arts accessible to anyone who is interested.



1

take a class

The best way to get involved at The Crucible is to learn from our knowledgeable and talented faculty who make it the special place it is. The Crucible offers both youth and adult classes in a variety of formats, levels, and price points, ranging from project-focused classes, introductions to a discipline, and continuing offerings that can transform a novice into a skilled and confident craftsman.

Once you have a few Crucible classes under your belt, you can sign up for lab sessions, where you can use The Crucible's equipment to work on personal projects and continue to develop your craft.

thecrucible.org/class



4

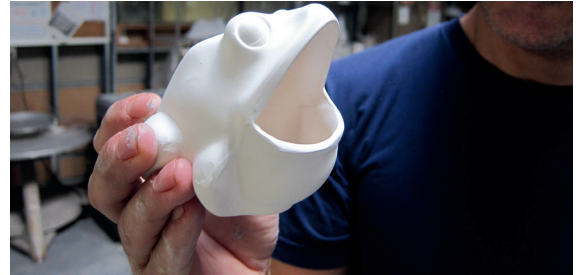
bring your team

The Crucible's hands-on team building workshops in the industrial arts boost morale, lower stress, and stimulate creative thinking. Fun, rewarding group classes encourage collaboration, problem-solving, and exploration while teaching techniques in welding, glass fusing, flameworking, blacksmithing, plasma cutting,

jewelry making, woodturning, and more. We offer 2- or 3-hour workshops for groups as large as 150+. Participants can create their own projects or work on one project together, like a glass fused representation of the team's logo or a unique welded and forged welcome sign.

thecrucible.org/teams

2



become a member

Join today and enjoy a full year of valuable benefits at an arts education center like no other. All Crucible members receive a 10% discount on classes, members-only early registration, discounts on event tickets, and exclusive access to the CREATE program. Plus, your membership contribution directly supports arts education for youth and adults in our community.

thecrucible.org/members



3

volunteer

As a nonprofit, we rely on a dedicated team of volunteers to make our work and mission possible. We have an amazing group of folks who give their time and energy to help the studio run smoothly, keep our bike program rolling, support

office staff, and so much more. You don't have to be an industrial artist to support our work! To show our gratitude, we offer our volunteers a range of benefits, from discounts off class tuition, studio access, specialty programming, and free entry to on- and off-site events.

thecrucible.org/volunteer



5

make a gift

Gifts to The Crucible Fund are vital to our mission to inspire students, encourage artists, spark creativity, and ensure arts education remains accessible to

everyone. When you contribute to The Crucible, you're ensuring industrial

arts education is available for you and your community now and in the future. Tuition only covers 65% of our annual operating budget; your support ensures we can continue to expand our programs and offer free youth programming for selected students. All contributions are fully tax-deductible. In addition to cash donations, The Crucible also accepts in-kind donations of tools, bicycles, and materials, which helps keep our costs down, and helps you clear out your garage!

thecrucible.org/support



6

engage in youth programs

Thousands of Bay Area youth, ages 8-18, have attended Crucible classes, camps, workshops, and events. We provide a unique setting for youth to explore their creativity while absorbing real-life lessons in science, technology, engineering, art, and math. During summer, youth ages 8-18 take over the studios for six weeks of weeklong camps in morning, afternoon, and all-day formats.

Throughout the year, we offer weekend and afterschool classes, free field trips to Oakland public school students and Title 1 schools, plus free bike repair and maintenance training to youth through our Earn-A-Bike Program and Bike Fix-A-Thon events. High School students interested in continuing their training in the arts can apply for our paid two-year Fuego Youth Leadership Program to deepen their technical skills, practice leadership skills, gain teaching experience, and support our youth classes.

thecrucible.org/youth-programs



7

attend an event

The Crucible produces and participates in a wide variety of events, including open

houses, our annual GIFTY craft show, intimate Artist Talks, fundraising galas like the Fire & Light Soirée, and offsite events throughout the year. Through collaborations with highly-trained artists, we strive to offer memorable experiences and accessible events for our community. Join us!

thecrucible.org/events



8

rep the crucible

Show off your love of The Crucible, while supporting our mission! You can choose from a number of high-quality Crucible merchandise and apparel options, including branded hats, 100% cotton short and long-sleeved t-shirts, soft fleece hoodies, and hand-dyed tote bags and face masks.

thecrucible.org/apparel

THANK YOU

Our donors support our nonprofit work to provide over **\$100,000** in scholarships and free programming to low-income BIPOC youth and families. We are proud to acknowledge the donors who have made our work possible since January 2020.

🔥 Look for the flame to spot a Flamekeeper! Our monthly donors help sustain our mission.



"HERE YOU HAVE THE FREEDOM TO CREATE ANYTHING THAT YOU WANT—IT COULD BE SOMETHING THAT IS BEYOND THIS WORLD—AND YOU STILL HAVE PEOPLE HERE TO SUPPORT YOU."

Ashala Jones, age 18

Scholarship student and Fuego Youth Leader in Ceramics

● OUR CORPORATE & INSTITUTIONAL DONORS

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StopWaste
Teichert Foundation

● INDIVIDUAL CONTRIBUTORS

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Warren Breslau and Frances Hellman

● \$5,000+

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"ART IS REALLY IMPORTANT TO ME BECAUSE IT'S JUST THE WAY I EXPRESS MYSELF."

Bryan Manzanarez, age 15

Scholarship student in
Youth Glass Flameworking I



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Kenneth Ferry
Jesse Pollak and Catherine Bugayong
Suzanne Foster

• \$500+

Muhsin Abdul-Musawwir
Rahim Adatia
Melissa Alexander
James and Stephanie Andrews



"THE CRUCIBLE IS A NICE PLACE TO BE. WHEN I GET TO THE END OF A PROJECT, I FEEL ACCOMPLISHED AND LIKE I'M COMPLETE."

Erick Dawkins, pictured at age 11

Scholarship student in Youth Clay Critters, Youth Kandi
Cuffs and Perlers, Youth Gizmos, Youth Woodcarving and Sculpting



Anonymous
Anonymous
Cynthia Arbanovella
David Arnott and Nicole Vicinanza
Cyan Banister
Dennis and Suzi Bartels
Blythe Jack
John Bowers
Rebecca Bravo
D. Michael Bussell
Maria Buttram
B Byrne
Matt and Sarah Campbell
Christopher Carfi
Terry Carlton
Joanne Casey
David Chen
Lin Cheyer
Geoffrey Clarke
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Bruce Keene
Michelle Kim
Michele and Peter Koning
Peter Kropf and Mary Sorber
David Kwok
Todd and Pamela Lane
Keri Levy
Monique Liburd
Marc Liyanage
Dorian Lok
Benjamin E. Lutch
Catie Magee
Schuyler McAlister
Mark McClelland
Paul Miller
Rich Moore
Igor Morozov

Margaret Norman
Harold Owen
Amy Palke
Denise Pinkston
Glenn Powell
Leslie Pritchett
Jackie Ray
Laura Sawczuk
Gregg Schluntz
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Mike Shea and Kati Miller
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Chris Skelton
Jung bae Sohn
John Stancik
Nigel Stevens
Madelyn Stone
Mary and Tom Stubbs
Lisa Swartz
Daniel Sykes
Margaret Urban
Nicole Von Kaenel
Carrie Webber
Cathryn Weems
David Weisbach
Matt Werner
Eric White

● \$250+

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Scott Allaway
Casey Allen
Anonymous
Anonymous
Olgica Bakajin
Suzanne Bang
Richard Bargloski
Steven Bayles
Stan Beraznik
Stephanie Berger
Leo Berkenbile
Karen Biber
Shea Bond

**“OTHER KIDS SHOULD
COME HERE TO GET
AN UNDERSTANDING
OF WELDING OR BIKE
MECHANICS BECAUSE
THAT COULD BE THEIR
CAREER—AND IT’S
REALLY FUN!”**

Joaquin Wong, age 13

Scholarship student in Youth Bicycle Maintenance



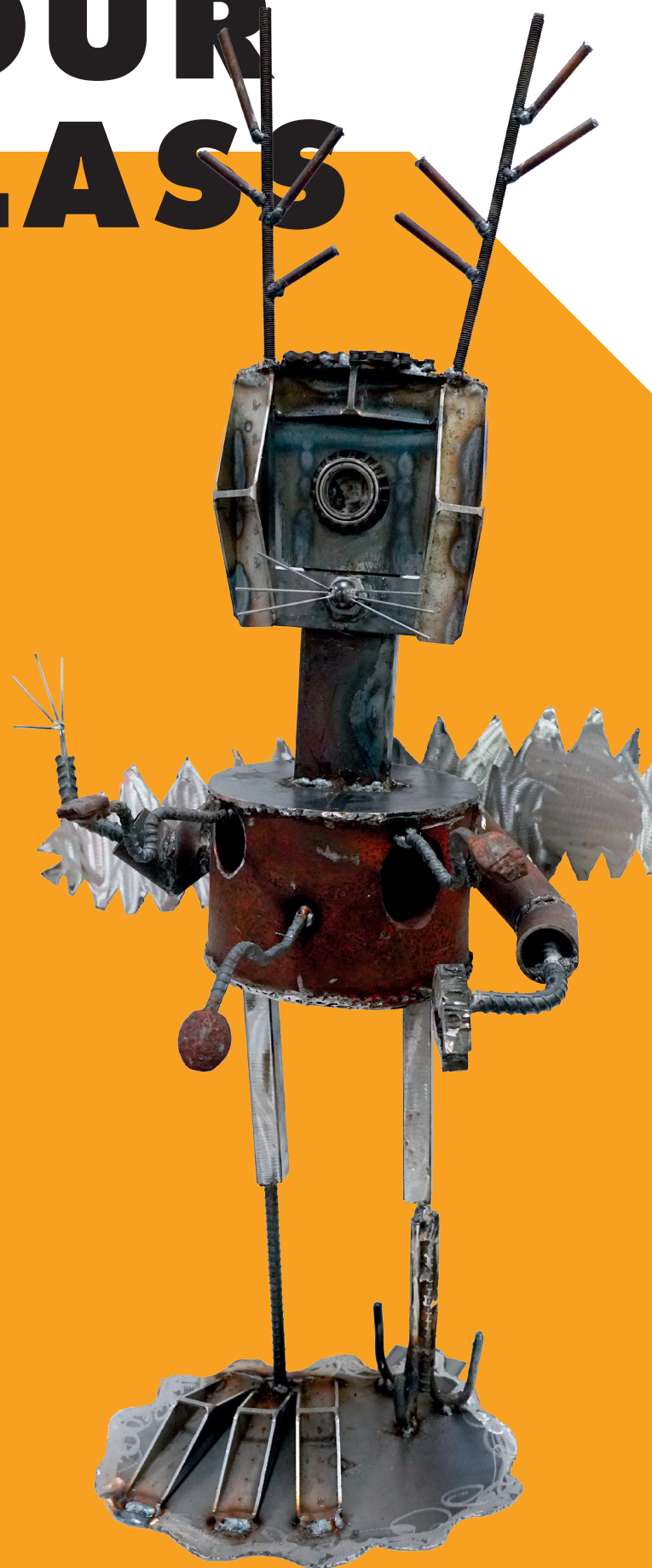
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Vanessa Yingling

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Welded sculpture
by Khaled Saeed



VALUES

We **value** innovative, non-competitive, imaginative creation and play.

We **respect** our community – inside and outside the building – and center our work in Oakland and the East Bay.

We **celebrate** a culture of lifelong learning and teaching, sharing the transformative power of art with everyone who is interested.

We **cultivate** a safe, welcoming, respectful environment where we honor people, varied life experiences, and craftsmanship.

We **meet** people where they are and learn and collaborate with them.

We **ignite** joy.

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