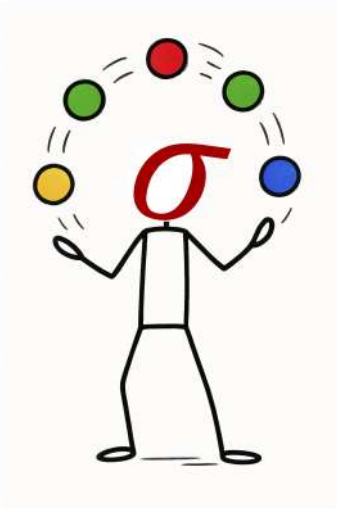
Glassblowing

by Mark Lukin

Glass makes a perfect container for most chemical substances, so chemists use a lot of glassware, sometimes of very exotic shape. This is why most experienced chemists are also glassmakers. During this workshop we will learn some basic glassblowing techniques.

Juggling

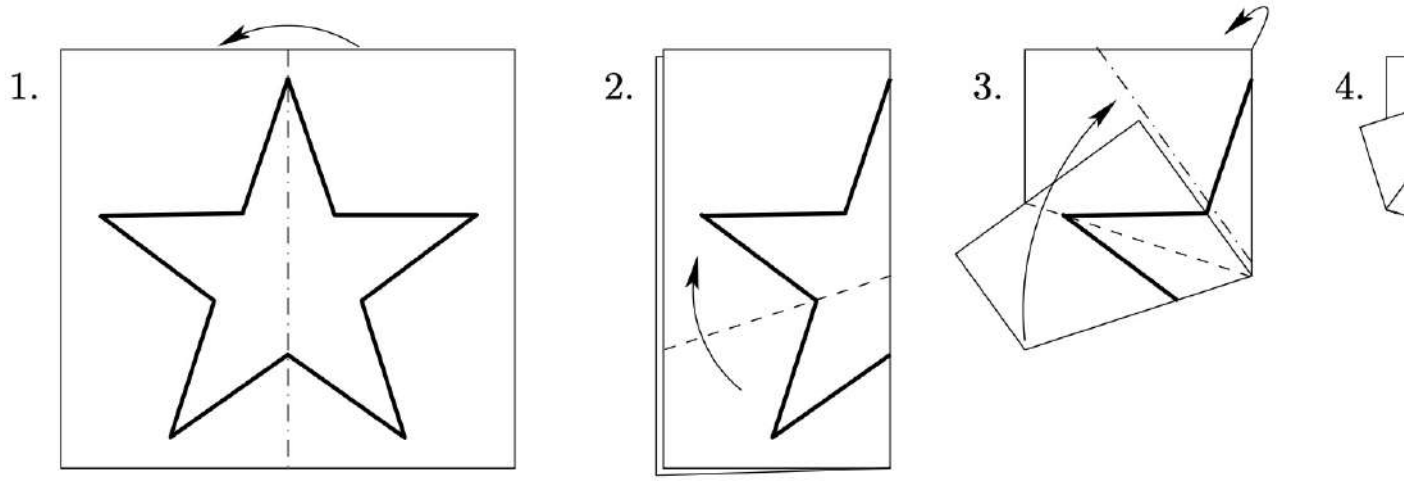
by Adam Smith



Have you ever wanted to juggle watermelons in the supermarket, but felt awkward about spattering people with juice as you practice? This workshop is for you. We'll cover two basic skills: passing hand to hand and three-ball juggling. If we get good enough, we'll try passing between jugglers. We'll have other objects to try juggling, like pins and scarves and flaming torches.\footnote{We won't actually have flaming torches.} No tasty fruit will be harmed.\footnote{Unless you count lemons as tasty.} \textit{Note:} This workshop is aimed at beginners. Experienced jugglers are welcome but may be pressed into service as teaching assistants.

Fold-and-Cut Magic

by Adam Smith



What shapes can you make by folding a sheet of paper, making a single cut, and then unfolding the sheet? We'll get to try making shapes, starting with simple ones and going to truly complex ones. We'll learn a general answer to our starting question, and see a few design techniques to help us fold the sheet to get the shape we want.

Competence with paper scissors is recommended (but not strictly required).

Image credit: Martin and Erik Demaine.

Time Travel Chess

by Andrey Boris Khesin

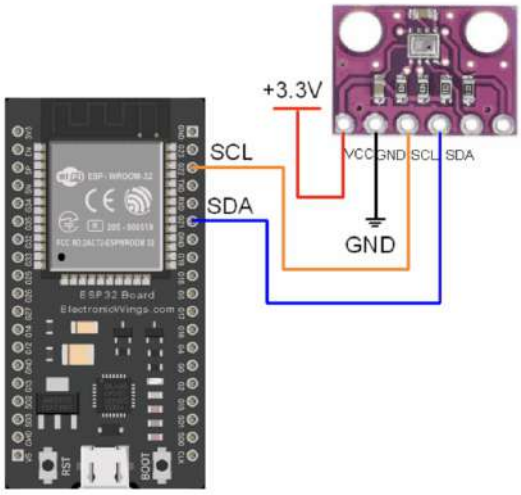
There have been many attempts at making a version of chess that involves time travel. At last, a reasonable version of this game has been created! A piece can step into a time machine and disappear, traveling to the future, only to reappear at a later date! A piece can suddenly emerge from a time machine, having travelled here from the future. Surprise!

But beware, time travel has dire consequences! Your pieces that will later travel back in time are now critical: if your opponent captures them, they won't be able to travel back to the past, so you will have created a time paradox, at which point the game ends in a fiery conclusion.

In this workshop you'll learn the rules of time travel chess, some basic strategies, and will get the chance to play the greatest chess variant of all time!

Build a weather station

by Nano Gennari



This workshop guides participants in assembling a compact weather station using an ESP32 microcontroller, temperature, and pressure sensors. Learn to wire components, code data collection, and connect to SigmaCamp's meteorological network. Program the ESP32 to read and transmit environmental measurements to a shared dashboard. Explore IoT basics, sensor calibration, and troubleshooting. No prior experience required; basic electronics/coding familiarity is beneficial. By the end, you'll have a functional station contributing to SigmaCamp's real-time weather survey and leave with practical insights into embedded systems for environmental monitoring.

Juggle a Soccer Ball

by Andrew Mata

Learn how to juggle a soccer ball

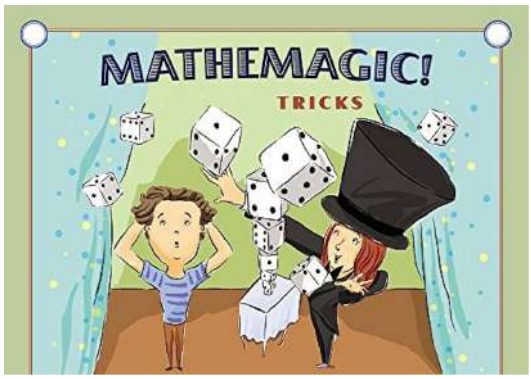
Making Silver Mirrors

by Phoebe Hartch

Tollen's Test is used to distinguish aldehydes from ketones. If an aldehyde is present, a thin coating of silver forms on the inside of the test tube. Here, we will use this reaction to create a beautiful silver mirror inside glass ornaments.

Mathemagical Tricks

by Sofya Raskhodnikova



Watch magical tricks based on math, try to guess the principle, and then make your own props so that you can amuse your teams and friends at home.

Zines Zines Zines

by Stasya Selizhuk

Zines (short for magazine) are self-made and self-published small booklets. They're fun, quirky, artsy, amateur, creative, often political, and whatever you want them to be. Do you want to showcase your art, have a story you want to tell, want to teach something, ideas that want to be shared, or just want to make something fun? Come make a zine!

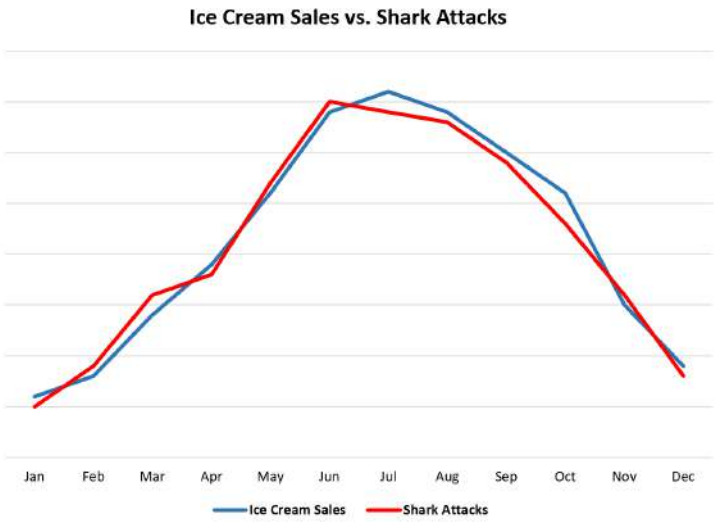
Bang! Nail guns.

by Alexander Brook

After discussing pneumatic tools in general, and familiarizing ourselves with a brad nailer, we will use it to shoot as many nails as we can.

Lie with Statistics

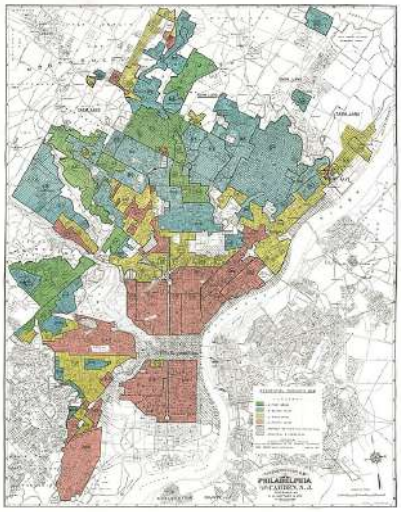
by Anna Rosner



Correlation can be causation if you believe hard enough! Come play with some data and discover the hidden reasons why the world is the way it is. Is left-handedness driving climate change? Ice cream consumption peaks in the summer - but so do shark attacks. Sounds fishy. Come make wild claims, support them with statistics, and possibly learn something about generating graphs or statistical tests - we'll have to wait for the survey data.

Urban planning and policy

by Anna Rosner



What makes a good city? Walkability? Infrastructure? The average amount of dogs you see on a walk?
Now you get to decide! Come be the fictional mayors of SigmaCity, where you will have to balance your budget, while attempting to please both your residents and the SigmaCity council.

* I accept no responsibility for corrupt Councillors.

Fun with Liquid Nitrogen

by Avia Raviv Moshe

Liquid nitrogen is nitrogen in a liquid state at low temperatures. In this workshop, we will perform some cool demonstrations—learn how to break a flower, shrink balloons, and form clouds. We'll finish by making some delicious ice cream.

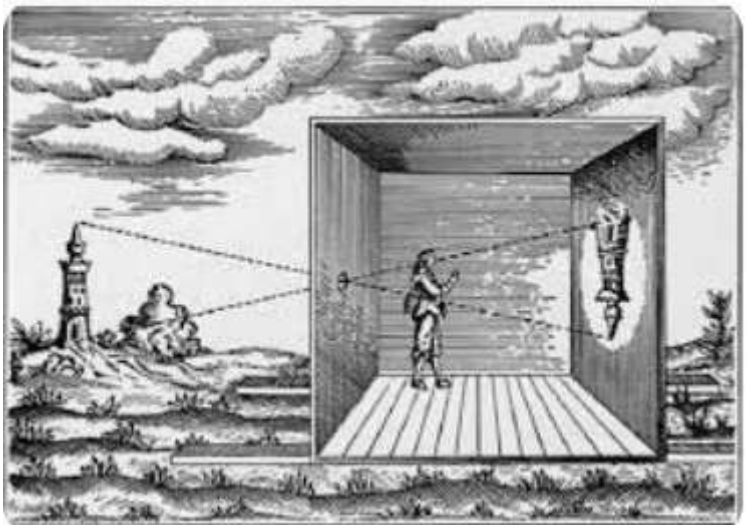
Want to be a professor?

by Olga Troyanskaya

So you want to be a professor? Let's chat about the good, the bad, and the complicated. We'll have an interactive discussion touching on all aspects of academic career - from how to get into (and select!) the best graduate school, how to land an academic job, how to get grants etc to the current challenges in funding and universities. You get to drive the discussion!

Camera Obscura

by Vicka Bershadsky



See the world up side down though a pinhole camera of your making

Holographic chocolate

by Polya Zavyalova

You've seen the characteristic rainbow on the back of a DVD, but did you know that you can make the same pattern on chocolate? Come to this workshop to learn about diffraction gratings and make delicious iridescent treats!

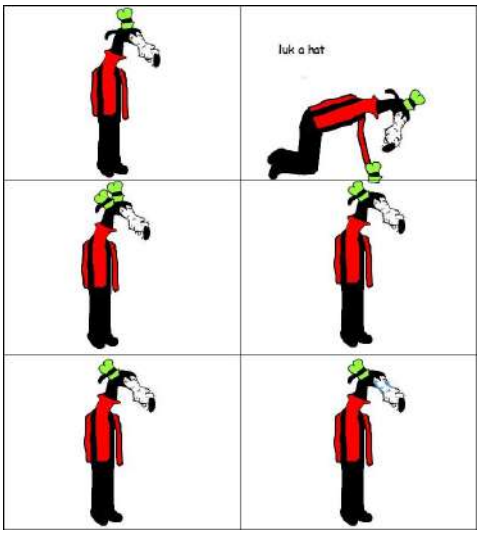
Living Balloon Animals

by David Bershadsky

Make simple soft robots that can walk and jump, and do whatever you want.

Comics!

by Paulina Ferreira



What adventures do you think sigmaperson will be going this camp? What adventures are YOU going this camp? What about the coolest page you ever saw on a comic book? Let's make our own!

Engrave Your Own Print

by Iris Brook

Dive into the exciting world of linoleum printmaking in this hands-on workshop! Learn about the fascinating history of printmaking, from ancient methods to modern masterpieces, and discover how artists create stunning prints. Then, roll up your sleeves and get creative as you are guided through designing, carving, and printing your own unique artwork. Come create your own amazing print!

GeoGuessr 101

by Anatoly Zavyalov

GeoGuessr is a popular browser game where you are given a random location in Google Maps, and you need figure out where you are in the world. The game has recently become an eSport, with dozens of pros from all over the world competing for a $50,000 USD prize pool. In this workshop, we will play some GeoGuessr and learn how to guess where you are in the world based on driving direction, position of the sun, language, landscape, and more!

From Molecule to Mood

by Zyama Teytelman

We will go over the compounds responsible for some common and famous smells used in perfumery (such as roses, vanilla, lavender, etc). You will then have the opportunity to make your own fragrance using just those compounds. At the end, we'll compare several pure compounds with the essential oils from the plants they naturally contribute to. If we have time after, we can also try creating a fragrance that uses essential oils together with pure chemicals.

Come join to NOSE-DIVE (literally) into this workshop!

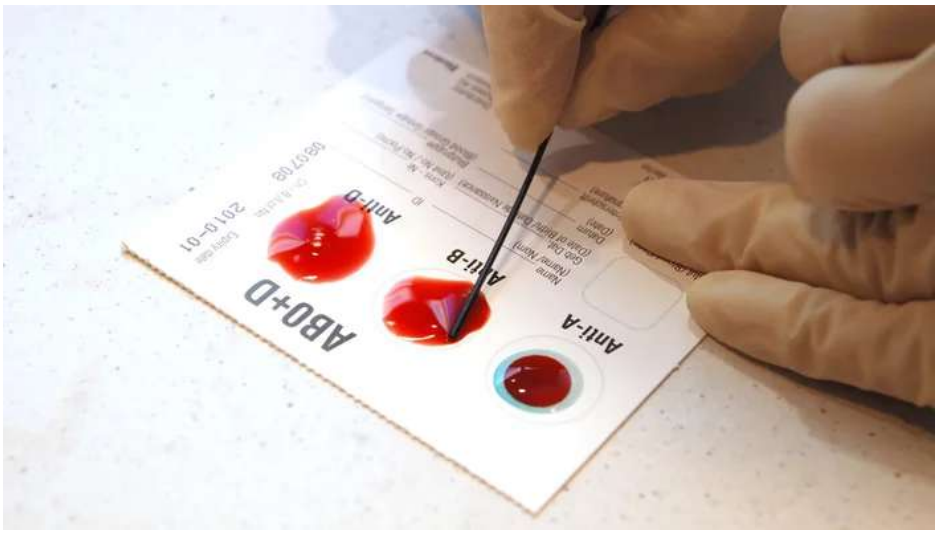
Intro to Chess

by Rebecca Balaban

Whether you're prepping for Chessball or just tired of getting checkmated in four moves, come learn the basics of chess and master the strategies to pull off a Scholar's Mate with style.

What is your blood type?

by Rebecca Balaban



Knowing your blood type is essential for medicine, genetics, and transfusions! Learn how blood types are determined, why they matter, and what yours is! You will be using your own blood for this workshop, so come prepared to donate!

The Magic of Planarians

by Lena Yakubovskaya

Regeneration is one of biology's greatest mysteries. Planarians, remarkable flatworms, can regrow entire body parts, a feat that has fascinated scientists for centuries. How do they do it, and why can't humans? In this workshop, we will delve into planarian anatomy and explore the mechanisms that enable these fascinating creatures to replace missing organs and body regions. We will observe planarians under the microscope, experiment with their regenerative abilities, and to take home a new pet or two.

Debate Games!

by Ashley Malkin

Do you want to improve your critical thinking and public(ish) speaking skills? Do you want to play fun games? Do you want to...*argue*? Come to Debate Games! During this workshop, we will play different games where you get to (respectfully) debate, have fun, and maybe even learn something along the way. No experience with formal debate necessary, both beginners and campers who participate in Speech & Debate at school are welcome!

Taylor Swift & Bracelets

by Anat Dubinsky and Stasya Selizhuk

Come listen to Taylor Swift (and Taylor Swift adjacent music) and make friendship bracelets!!

Blue Collar Car Work

by Nikolai Styrkas

With AI taking over and white collar jobs disappearing left and right, it may be time to return to simpler times and get dirty with our hands. AI may be getting quicker in the mind but until Boston Dynamics or Tesla step up their game with robots, we still have a chance!

Sigma fell right on Nikolai's 40,000 mile maintenance mark so come down to Nik's shop and help him perform several jobs including but not limited to:

Oil Change $
Air filter changes $
Brake Pads and Rotors Replacement $$$
Brake Fluid Flush $$
Transmission Fluid Change $$
Coolant Flush $$
AC repair $$$$
and More!

This will most likely happen over the course of multiple days so we will be knocking these out one by one. Jamming to some music I'll be answering any questions you have about cars and/or the world around us(To the best of my ability).

Mystery Bead Bottles

by Nikolai Styrkas

In this workshop I will introduce the concept of intermolecular forces that dominate the world of chemistry. After the mini lecture we will create an experiment to showcase these forces in action with a project that you will get to take home.

Frames for SigmaBees

by Oksana Ivashkevych

Catching a bee swam takes a bit of luck. But we can improve our chances by making a welcoming furniture. In this workshop we will assemble beehive frames, install frame wire, and mount a natural beeswax foundation. The frames will be put into the trap to catch Sigma Bees.

The Life of Bees

by Oksana Ivashkevych

The life of bees is full of mystery. They live in hidden spaces, occasionally sting, and somehow turn flowers into honey. Observing them up close is no easy task. Beekeepers in their white suits, surrounded by swarms of buzzing insects, can seem almost alien.

In this workshop, we'll get a rare, up-close look at the fascinating world of bees—through the window of a real observation hive.

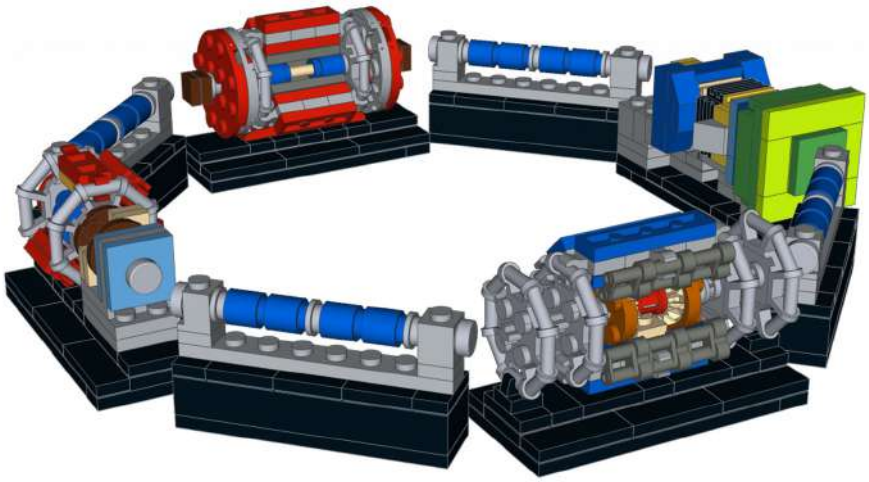
Start in Blues Harmonica

by Alexander Galkin

How to play simple diatonic harmonica. How to make notes. First and second position. Bends and licks. Only 6 people.

Build Your Own Detector

by Deniz Erdag



Everyone wants to find new particles. And so do you. We will learn the essential components of what makes the world's biggest detectors and make our own with building blocks that can rival the cost of real ones (legos).

Light a survival fire

by Joaquín Martínez Martínez

We will learn how to use a few basic tools to start a survival fire. This can be an important skill to have when you are out camping to stay warm or cook a meal. Equally important, this will be handy when you need to start a camp fire in your back yard to roast marshmallows, which we will do if we are successful completing this workshop.

Pimp my Bike

by Lev Bershadsky

In this workshop, campers will work together to build a perfectly normal, fully functional bike—no flames, no LEDs, no handlebar tassels. Just a regular bike, assembled from a pile of parts that definitely didn't look like a bike at the start.

Along the way, they'll learn real mechanical skills: how gears work, what a bottom bracket is, and why following instructions actually matters sometimes. It's all about teamwork, patience, and the quiet satisfaction of turning a box of metal into something you can actually ride (theoretically).

The Science of Espresso

by Nestor Tkachenko

In this workshop we will be diving into the fascinating world of coffee, going through each step of making a perfect espresso and the interesting science behind it.

You'll have a chance to learn hands-on how to use an espresso machine and dial-in a grind, and even enjoy your own *decaf* latte!

Capitalism vs Socialism

by Nestor Tkachenko

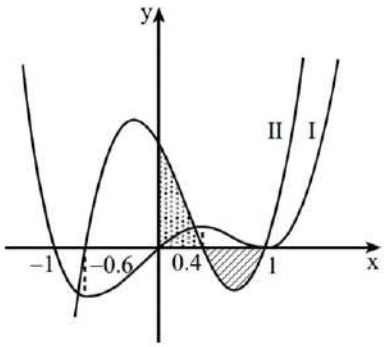
This workshop will be a moderated debate / discussion regarding the advantages and downsides of capitalism vs socialism as a framework for society.

In the modern day we experience downsides of capitalism every day - debts, lack of social benefits, healthcare, etc. Socialism is often proposed as an alternative that could fix these issues, however it also has it's fair share of criticisms.

Join us for a lively discussion to dive deeper into these topics to increase our understanding of the issues.

How Hebrew works

by Alexander Brook



בציור שלפניך מוצגות סקיצות
של שני גרפים: גרף I וגרף II.
אחד הגרפים הוא הגרף של פונקציית
הנגזרת $f'(x)$, והגרף האחר הוא הגרף
של פונקציית הנגזרת השנייה $f''(x)$.
א. איזה גרף הוא של $f'(x)$,
ואיזה גרף הוא של $f''(x)$? נמק.
ב. מצא את שיעורי ה- x של נקודות הקיצון
של הפונקציה $f(x)$. נמק.
ג. מצא את שיעורי ה- x של נקודות הפיתול של הפונקציה $f(x)$. נמק.
ד. הוכח שהשטח המוגבל על ידי גרף II וציר ה- x (השטח המקווקו בציור)
שווה לשטח המוגבל על ידי גרף II והצירים (השטח המנוקד בציור).

Want to meet a new language?

We will talk about Hebrew – a Semitic language with some features that are very different from the Indo-European languages that you are probably more familiar with. We will explore glottal and pharyngeal sounds, three-letter roots and patterns, the seven families of verbs, pronominal suffixes, and other aspects of Hebrew's surprisingly orderly and systematic grammar.

If you are curious about languages, there are no other prerequisites.

Tote Bag Design

by Gabriela Frajtag

Create your own personalized tote bag using colors, patterns, and your imagination. Take home something uniquely yours—let's paint together!

Sourdough Bread

by Ben Kremnev

In this workshop, participants will learn how to bake sourdough bread from start to finish. We will also delve into the science of why bread rises and fermentation. Finally, we will have a discussion on gluten from the viewopints of chemistry and biology - what it is, how it works in bread, and how it works (and sometimes doesn't work!) in our bodies.

* This is a two day workshop! Attending Day 1 is not a requirement to attend Day 2, but campers who attend Day 1 will be prioritized to be assigned to Day 2.

From Flame to Function

by Lenny Krivenko

Ever wonder how heat moves through a metal rod or how scientists and engineers predict it? In this hands-on workshop, you will observe real heat conduction in action using an aluminum rod, thermometers, and a controlled heat source. You will collect your own data, track how temperature changes over time, and compare what you observe to a real mathematical model used in physics and engineering.

No advanced math is required–we will walk through everything together. You'll leave with a better understanding of how heat spreads, how data connects to equations, and why this matters in the real world, from cooking to designing spacecraft.

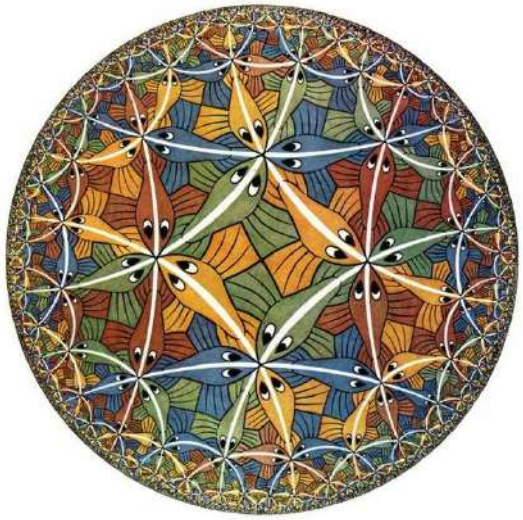
Rockets and Propulsion

by Nikita Podobedov

During this workshop we will be flying powerful model rockets and discussing some basic principles of propulsion (reactive motion) and stability.

Hyperbolic geometry

by Maya Smith

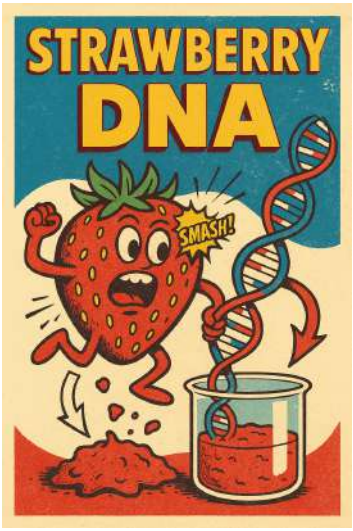


When Euclid formalized geometry, he based it off four axioms and one postulate (called the parallel postulate). But what happens if you remove that postulate and allow each line to have infinitely many parallel lines going through every other point?

In this workshop, we will explore hyperbolic geometry by building models, looking at art, and even playing a video game.

Strawberry DNA

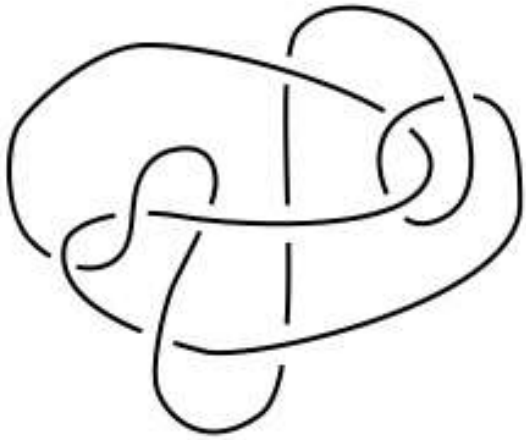
by Anastasia Zhurikhina



Did you know strawberries have so much DNA, you can actually see it with your own eyes — no microscope needed? In this experiment, we're going to smash some strawberries, add a secret solution, and pull out their entire genome. Strawberries are DNA goldmines — they have eight copies of every chromosome, which means extra genetic material just waiting to be revealed. You'll get to see it, swirl it, maybe even spool it onto a stick like long strands of bio spaghetti.

Knot Theory

by Daniel Salkinder

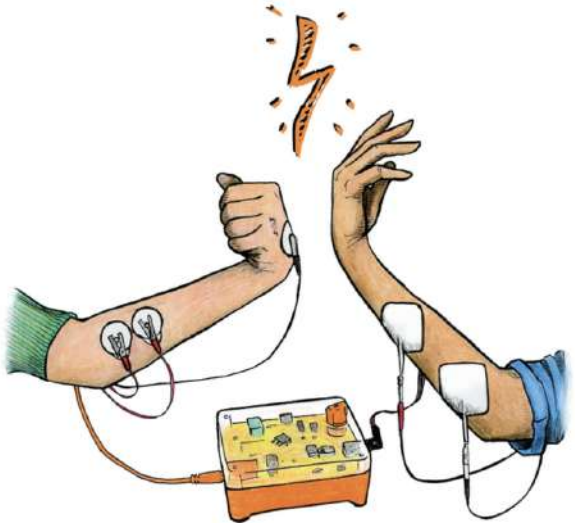


Is this piece of string knotted (can you unwind it into a circle without the string intersecting itself)? This is easy to ask, but surprisingly hard to answer. In fact, mathematicians only found a way to definitively tell whether or not a piece of string is knotted in the late 1990s.

In this workshop, you'll construct and untangle some knots, learn how mathematicians prove certain knots are knotted, and finally do a "dance" called the "tangle" that helped John Conway efficiently tabulate small knots.

Mind-Control Muscles

by Anna Bloch



Have you ever wondered if mind control was possible? In this workshop, we'll learn how your nervous system uses electricity to control muscles, and how scientists use that same idea to build prosthetic limbs. We'll look at real world examples of how people can move robotic arms with their own muscles, and then you'll get to see it in action by using a microcontroller to send a signal from your arm to activates another camper's muscle!

What is a Martial Art?

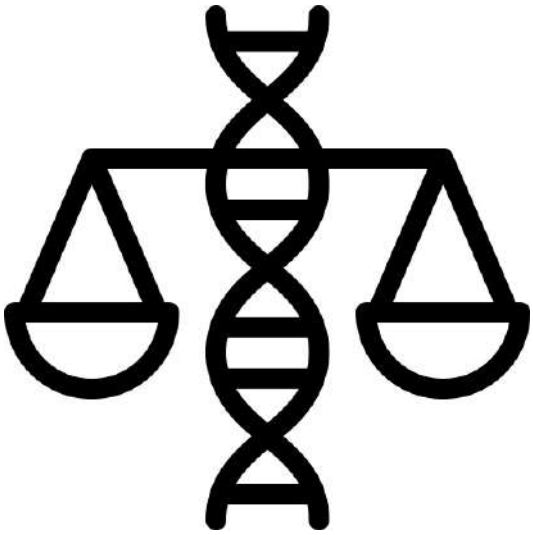
by Arthur Rabello Oliveira

In this workshop we will delve into the history of Kung-Fu and Karate, how it affects one's lifespan and the philosophy behind. We will discover how simple physics can change the game, and perhaps save one's life.

We will also learn basic karate moves - get ready to sweat! (do not use them on your fellow campers - if you)

Bioethics: don't be evil!

by Anat Dubinsky



Are you planning on going into medicine, environmental sciences, or law? How about ever participating in academic research? Chances are, if you are a living, breathing person at SigmaCamp, bioethics can help YOU to not be evil. We will explore landmark moments and fundamental principles of the field, and finish off with a camper-led discussion of current pressing bioethical issues.

Topology Arts and Crafts!

by Belén Franco de la Matta

In this workshop, campers will get a theoretical glimpse into the field of Topology, Map Coloring, and the Neighboring Domain Problem through a myriad of fun arts and crafts activities! Topology is the branch of geometry that deals with properties of surfaces that do not change under continuous deformations. Using play-doh, campers will learn what surfaces are and how mathematicians classify and differentiate them! Furthermore, campers will be introduced to German Mathematician Frederick Möbius' acclaimed Neighboring Domain Problem, which is closely related to the famous 4 Color Theorem. The Neighboring Domain Problem asks: What is the maximum number of colors needed to paint any map on a surface, such that each region borders every other region? Campers will paint their own mugs to prove that the maximum number of colors needed to fulfill the Neighboring Domain Problem on a surface with 1 hole is 7! No prior knowledge or mathematics background is needed, so just bring your creativity!

Let's Cook Pão de Queijo

by João Rafael

It's one of the most loved snacks in Brazil — cheesy, crunchy on the outside and soft on the inside. In this workshop, you'll learn a bit about its history, how to make it and get to eat what you cook. Come cook with us!

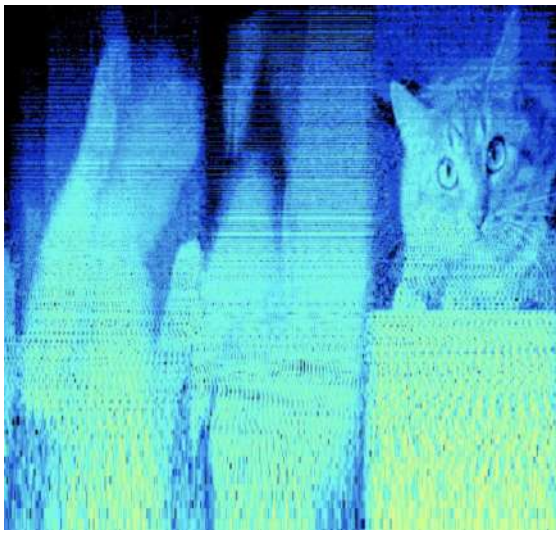
Make a musical instrument

by Ethan Abelev

We will build and tune our very own professional-sounding panflutes from everyday items, from scratch. Along the way, we'll learn sound wave physics and the engineering design choices behind popular instruments, and do some basic Fourier analysis. Finally, we'll take some time to practice our instruments and jam out.

Look at sound waves

by Ethan Abelev



Waves are complicated. Fortunately, we can use Fourier analysis to make them even more complicated. We will use this powerful and omnipresent mathematical technique, and some cool software, to see and understand the waves all around us and learn how it's used in physics, chemistry, biology, and engineering. Feel free to bring your panflute from last time, another musical instrument, your voice, or anything else whose sound waves you want to see. We might even get to build and tune more panflutes, time and supplies permitting.

SigmaPlague: 1 Day Later

by Ethan Abelev and Ashley Malkin

One year ago, a vicious plague swept through SigmaCamp. To study this mysterious malady and prevent a future epidemic, we gathered some data about the disease and how it ravaged the SigmaStaff. In this two-part workshop, we'll take on the role of an epidemiologist. Using real-world field data from a real outbreak at Sigma, theory of disease transmission, and computation, we will discern what actually happened—how and where this disease spread, who was at risk, and how we could have stopped it—and then create models to see the disease spread and explore what could have gone differently.

* This is a two day workshop! If you are placed in this workshop for the first day, you are not required to attend the second day. However, if you don't attend the first day, you will not be able to attend the second. If you have any questions, ask a counselor!

SigmaPlague: Day 2

by Ethan Abelev and Ashley Malkin

One year ago, a vicious plague swept through SigmaCamp. To study this mysterious malady and prevent a future epidemic, we gathered some data about the disease and how it ravaged the SigmaStaff. In this two-part workshop, we'll take on the role of an epidemiologist. Using real-world field data from a real outbreak at Sigma, theory of disease transmission, and computation, we will discern what actually happened—how and where this disease spread, who was at risk, and how we could have stopped it—and then create models to see the disease spread and explore what could have gone differently.

* This is the second day of a two day workshop! If you're attending Day 1, you are not required to attend Day 2. However, if you're not attending Day 1, you cannot attend Day 2. If you attended Day 1 and do/don't want to attend Day 2 but aren't sure what to do, ask your counselor!

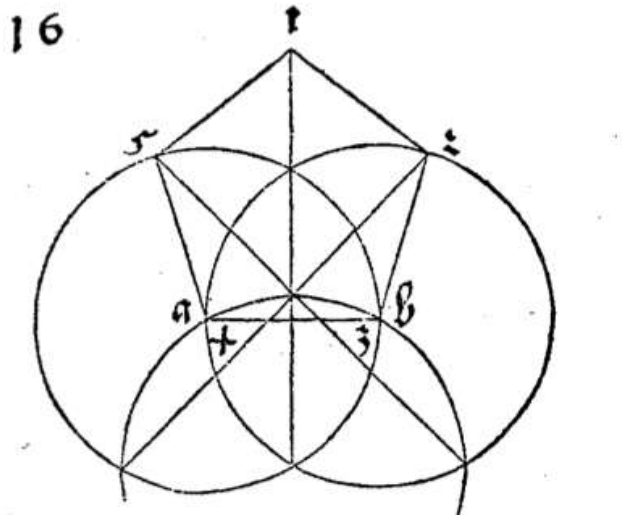
Shogi: Japanese Chess

by Jaime Ide

Experience shogi: where every piece can become a powerful force

Ancient Greek Drawing

by Matvey Borodin



The Ancient Greeks believed that two shapes were perfect: the line and the circle. Using these, they developed the art of ruler and compass constructions — a tradition of geometric drawing that's both creative and precise. In this workshop, you'll learn the basics of Euclidean constructions and try your hand at building perfect shapes using just a straightedge and compass. We'll tackle construction challenges, explore puzzles that remained unsolved for millennia, and learn about what "perfection" meant to the founders of math itself (no numbers in sight!). Come learn the art of the Ancients — and see how far two simple tools can take you.

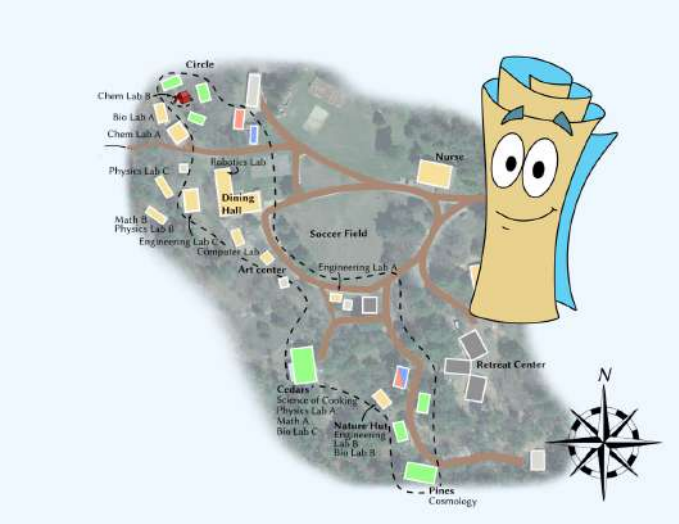
Bluff by Numbers

by Joel Brook

Learn the mathematical secrets behind poker strategy through interactive lessons on odds, probability, and decision-making, then put your new skills to the test in a tournament where smart play beats luck. The winners will walk away with candy prizes, but everyone will leave knowing how to think like a poker pro.

TREASURE HUNT!!!

by Sophia Syritsyna



Ever looked at a real, paper map and wondered how to get from point A to point B? ("Yes Sophia, of course I have!"). Well now, you're going to find out. With the help of compasses and orienteering, we'll traverse the campus of SigmaCamp in order to uncover some long-held faculty secrets—and perhaps even find some treasure along the way.

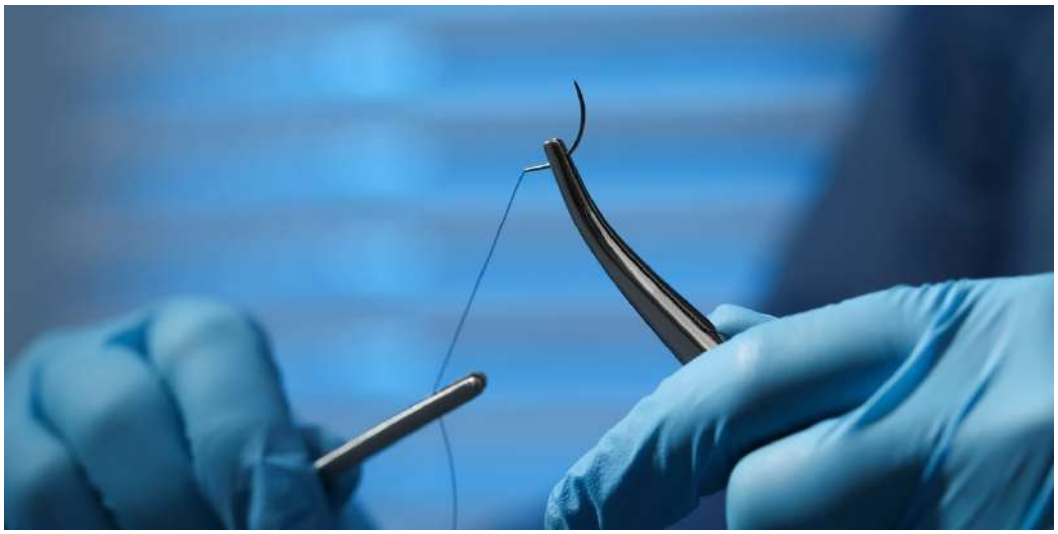
MCAT Jeopardy

by Ahlanna

Welcome to MCAT Jeopardy: Sigma Edition! This Jeopardy-style game is packed with questions from all major MCAT sections: Biology, Biochemistry, Chemistry, Physics, Psychology, Sociology, and CARS. The game is designed to challenge your knowledge and test your teamwork. Campers will go head-to-head in teams, buzzing in to earn points, tackle tricky concepts, and show off their future medical school potential! This friendly competition will certainly provide some twists – you may even be asked to operate!

Stitch Perfect: Suturing!

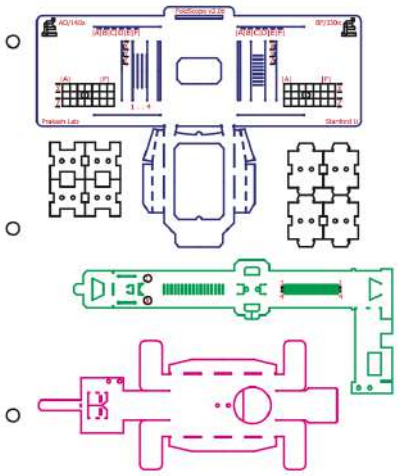
by Olga Brook



Ever wondered what it's like to have a surgeon's steady hands and precision? Join us to learn the fascinating art of suturing just like real surgeons! Under the guidance of experienced physician, you will discover the different types of sutures, practice your technique on realistic training materials, and master the delicate skills that surgeons use to save lives every day. Whether you're considering a career in medicine, love hands-on learning, or simply want to try something completely new, this workshop will give you a taste of what it's like to work in the operating room.

FoldScope field microscopy

by Leon Peshkin



We will demonstrate how to assemble and put to a good use $5 miscroscope made from paper and glue, and will try to immediately proceed to biological and pharmacological discovery by observing microorganisms we catch in the wild.

Origins of Consciousness

by Alex F

How did subjective experience come to be? When did the individual experience of single-celled organisms meld together into the collective hole of animals? What does it feel like to be a sponge? When does an AI begin to experience the world as a simple animal might?

I will review what we understand to be the origin of different aspects of subjective experience, like vision, perception of self, internal models of the world, and then ask you to speculate about questions that may be impossible to know the answer to, because these questions are too tricky and I want someone else to answer them for me.

What is Algebra, Really?

by Tarika Mane

In school, we often think of algebra as 'solving for x' in an equation. To mathematicians, algebra means something far greater - it began with finding the roots of polynomials and is now the key to solving famous problems such as the Riemann hypothesis. To understand abstract algebra, we can begin by playing card games, SET, looking at Rubik's cubes, and from there we can observe the symmetries and patterns within our systems. Come to this workshop to learn more about what algebra really is!

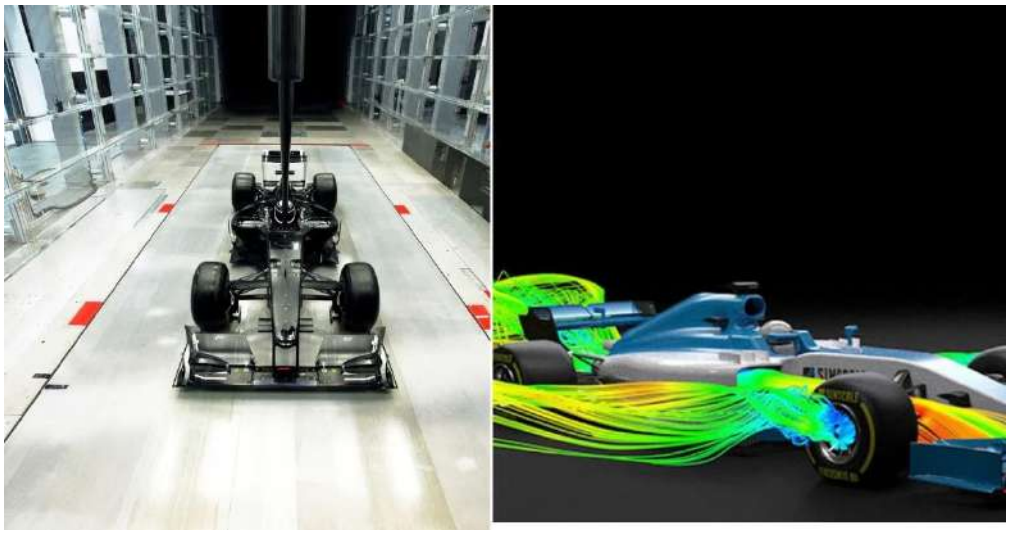
Treasure hunting

by Boris Podobedov

"There are tons of treasures just beneath your feet—mostly metals: gold coins, jewelry, silverware, and even copper scrolls. But you can't see them without the latest model metal detector in your hands. At this workshop, we'll learn how metal detectors work, then disassemble, reassemble, and fine-tune the best one for our needs (P.S. Silver Lake got its name for a reason). After that, it's time to go treasure hunting. The best part? You get to keep whatever you find (limitations apply—your must read our 168-page waiver at www.legalesejunk.com)."

Aerodynamics in Racing

by Alex Grinberg and Lea Nekrasova



Aerodynamics is an important aspect in many sports. Quarterbacks throw tight spirals to counter outside forces, and soccer balls curve through the air along ridiculous paths. There is perhaps no sport where aerodynamics is as important as in Formula 1- the gold standard of motor racing.
In this workshop we will examine how car design has evolved with our increased understanding of aerodynamics. Next, we will examine how regulations and designs have changed throughout the history of Formula 1 to produce fascinating cars that produce incredible amounts of downforce, leading to seemingly impossible cornering speeds. Finally, we will design our own car components and test them out in a makeshift wind tunnel.

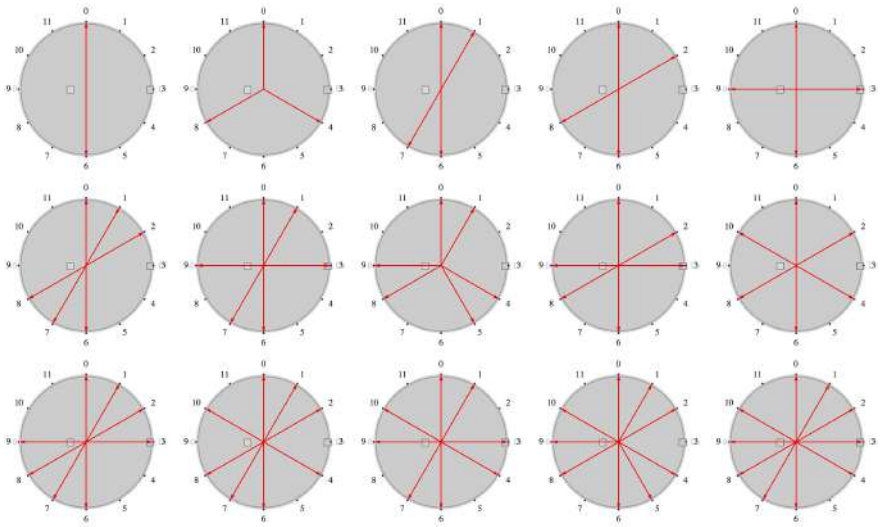
??Checkmate??

by Henrique Passoni

Get ready to cross portals to different chess realities! In this workshop, we will explore the multiverse of chessthrough creative and surprising variations of classic chess. Each game takes you to a new universe, with unusual rules, pieces with different powers and unexpected strategies. Ideal for curious people, strategists and game lovers who want to think outside the box, or rather, outside the traditional board!

Musical Modern Algebra

by Mark Shapiro



How many symmetries does an equilateral triangle have? We can rotate clockwise, counterclockwise, reflect along an altitude, or do nothing. We can also combine these symmetries to produce new ones; rotating multiple times, or rotating then reflecting, are also symmetries. However, these combinations are not unique: rotating twice clockwise is the same as rotating once counterclockwise, rotating clockwise then reflecting is the same as reflecting first then rotating counterclockwise, and rotating three times in the same direction is the same as doing nothing! In fact, there are only six distinct symmetries—can you find them?

The intuition behind combining elements of a set of transformations is encoded by mathematical objects called groups. In the 20th century, western classical composers developed compositional techniques which construct music around symmetries of tones and rhythms. We will use tools from group theory to explore these techniques (and music to explore groups). Then, we will listen to pieces by Schoenberg, Webern, and Messiaen which use these techniques and discuss what we hear.

Some experience with notated music is helpful, but not required.

Brigadeiro!

by Inayê Melo

Brigadeiro is one of Brazil's most beloved sweets. Simple and seriously addictive. In this workshop, you'll learn how to make this iconic treat from scratch and get your hands sticky in the best way possible.
You'll mix, roll, and decorate your own brigadeiros, while picking up tips to get the texture just right. Bring your creativity, your sweet tooth and leave with your own batch of deliciousness!

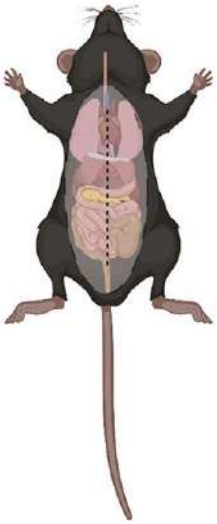
Terrarium Building

by Inayê Melo

Terrariums are small, self-sustaining ecosystems that bring nature indoors and brighten up any space. They are easy to create and care for, making them perfect for anyone interested in plants and the environment. During this workshop, we will explore the basics of terrarium construction and learn how to create beautiful mini gardens using simple materials.

What is inside a mouse?

by Alexander Galkin



In this hands-on workshop we will dissect a freshly euthanized laboratory mouse to explore its internal anatomy. We will examine the major organ systems, including the brain, heart, lungs, liver, stomach, intestines, kidneys,

Drills, Drivers, Impacts

by Anar Amgalan

We will learn power tool classification and usage. If you were ever confused by the categories of power tools, their bits, sockets, and tips, you are not alone, and we can help you here.
Come for an hour of 18V/20V action with Makitas, Ryobis and Dewalts. Sorry, we don't have any Milwaukee and Bosch tools for now.
We will discuss why it might seem impossible to make a hole exactly where you want it, and how to avoid splitting your wood piece while driving in a screw.
We will also touch on why Torx beats Hex and Hex beats Philips.
Finally, we have a fun competition of driving in as many long deck screws into lumber.

The Yogurt Effect

by Nikita Podobedov and Lev Bershadsky

In this workshop we will learn about the mysteries of the Yogurt Effect. While you may have heard of the Yogurt Effect before, we will dive deep to discover all of the intricacies behind this phenomenon. We will utilize fluid dynamics simulations, mixology techniques, and other applied science methods, to establish the key principles involved in this effect. Yogurt (and Lactaid) will be provided.

Three-part harmony

by Katrina Ligett

Whether you sing in a choir or just in the shower, you're invited to come sing with us! We will try to learn a (not too hard, not too easy) song in three-part harmony. Maybe we'll sound good, maybe we won't, but we'll have a good time.

Meat the Molecules

by Joel Brook

Discover the molecular secrets behind the perfect steak in this hands-on workshop where chemistry meets culinary art. We'll explore the Maillard reaction that creates those coveted caramelized flavors, understand how protein denaturation affects texture at different temperatures, and learn why resting your steak is crucial for moisture retention. Through interactive demonstrations and tastings, you'll master the science of searing, the role of salt in breaking down muscle fibers, and how heat transfer methods impact your final result. Leave with both the knowledge and confidence to consistently create restaurant-quality steaks using scientific principles.

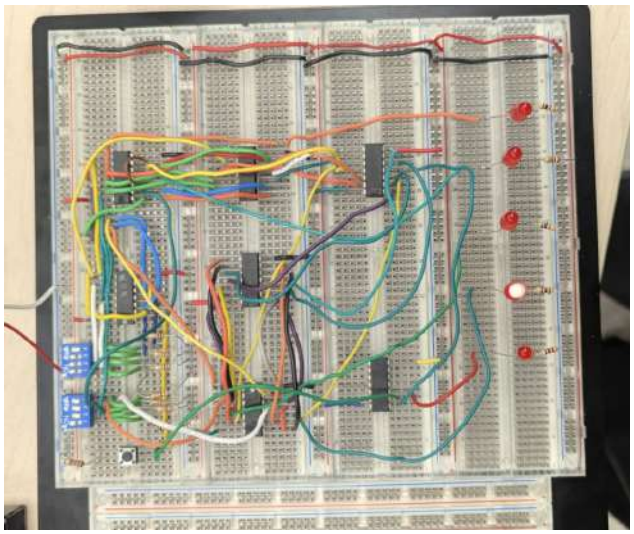
Make Your Own Automaton!

by Ian Selizhuk

Ever wonder how wind up toys or animatronics work? Automata are moving sculptures that are powered by simple mechanisms, and change circular motion into vertical motion by using cams. In this workshop, you'll learn how automata work, experiment with mechanical motion, and build your own cardboard automaton with a custom scene. If you're interested in engineering, art, or just want to make a moving art piece, this workshop is for you!

K-Maps & Circuits

by Avitel Gaidukova and Ada Langford



If you've ever used a computer, built an Arduino project, or operated a calculator, then you've interacted with digital logic. At the heart of this logic lies the Karnaugh map — a visual tool that helps simplify complex Boolean expressions into clean, efficient forms. In this workshop, we'll explore the process of logic simplification, starting with truth tables and ending with streamlined expressions. Then, we'll take it a step further and bring those expressions to life by building real circuits using logic gates.

Popping Boba!

by Katia Borodina

In this workshop, we will explore the chemistry behind making popping boba and make some ourselves! Join us to make the popular drink with flavored popping pearls while learning about the reactions that take place in its creation.

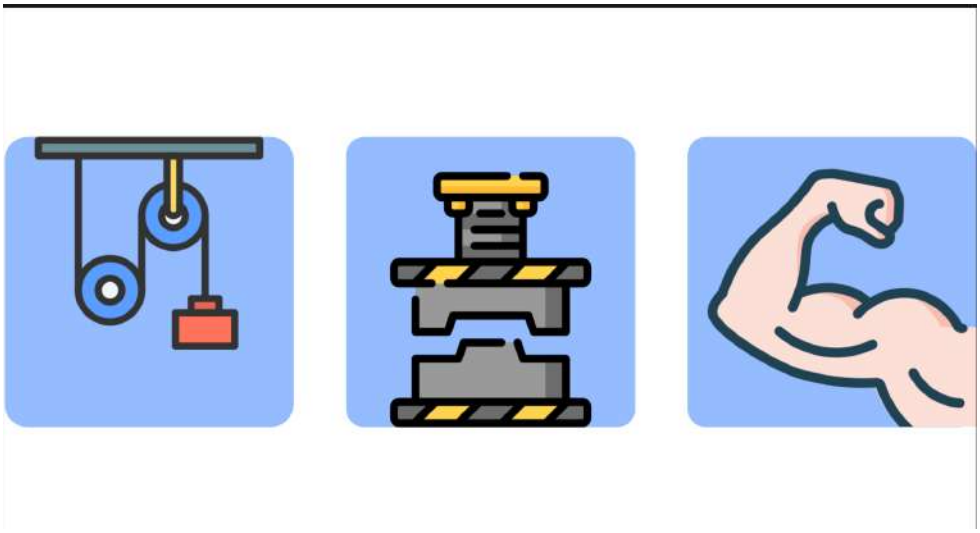
Architecture & Design 101

by Sasha (Portnoy - if you need the last name)

Have you ever seen those mildly infuriating architectural nightmares that seem so abundant nowadays and think, 'I could definitely do better than that'? Every single building around you had to be designed by someone. That is a complicated process that has become more and more standard over time. Come join me in designing your own library, learning how architects think, and how to put your ideas onto paper along the way.

Superpowers of Pulleys!!

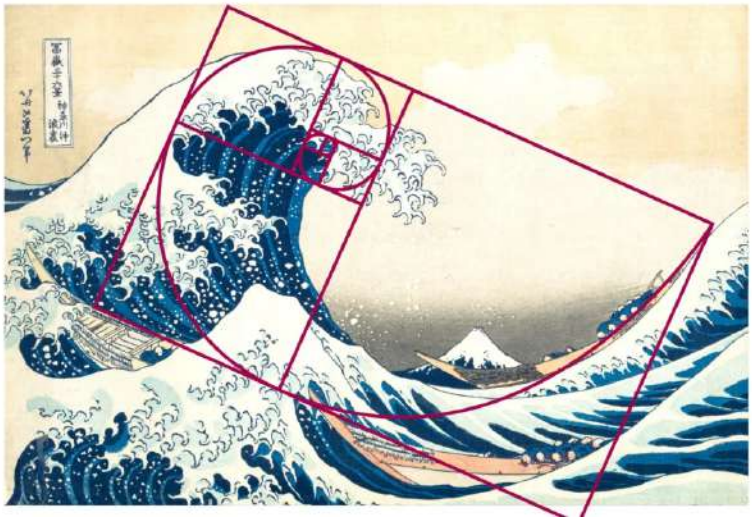
by Santiago Franco de la Matta



Do you want to know how it feels to have superpowers? Want to lift the heaviest of objects with little to no effort? Simple machines can make your wish come true! In this workshop, we will explore how pulleys and hydraulics move these massive and heavy objects easily. Pulleys are everywhere! They are used in construction and even your elevators! This is how we lift the heavy equipment up to the top of the buildings or how an elevator can move 5,000+ pounds of material! At the end of the workshop we will even build pulley systems of our own and try to move heavy objects!

Fibonacci & Design

by Katia Polina



Love both art and math? Come to my workshop, where we will explore how the Fibonacci sequence and the golden ratio show up in nature, architecture, and design. Then you can create your own masterpiece using the Fibonacci spiral!