

Challenge Camp



A Summer of Fun and Learning, too!

This is our Challenge Camp class schedule for Summer 2024. The schedule is subject to change for compliance with State and County Health Department guidelines.

- 1) **A full day of camp consists of 5 classes and is from 9am – 4pm.** Morning Workshops are 90 minutes (9:00 and 10:30), and Afternoon Classes 60 minutes (1:00, 2:00 & 3:00) are a mixture of sports and enrichment options as campers are encouraged to challenge both their minds and bodies.
- 2) We use camper's **CURRENT GRADE as of September 2023** for class selection.
- 3) There are over 100 STEM & Arts Enrichment Options for you to customize a schedule based on your child's interests. Everything at Challenge Camp is elective, your camper takes the classes you select for the entire 4 week or 3 week session.
- 4) Certain courses may have a materials fee listed. These are typically for class kits or materials used in camper projects.
- 5) If you need assistance or have any questions, please email info@challengecamps.com or call the camp office on 914-779-6024.

Challenge Camp – Summer 2024

1) Engineering Everywhere Instructor: Michael Donovan

Session 1 9:00 Grades K-1
 10:30 Grades 2-3

Engineering uses science, math and art to solve problems and think about new and creative ways of making something better. In this hands-on class campers are encouraged to let their brains go to work designing and building fun projects promoting problem solving, teamwork and confidence. We will discuss engineering marvels in our everyday lives and explore ideas and designs of our own. Basic engineering principles like weight and motion will help you build your own Ferris wheel, marble roller coaster, catapult, Rube Goldberg creation, self-supporting bridge or anything you can imagine with objects you can find everywhere.

2) Weird and Wacky Experiments Instructor: Michael Donovan

Session 2 9:00 Grades K-1
 10:30 Grades 2-3

Be a nutty professor and join us in the science lab for weird and wacky experiments! This exhilarating course takes children on an adventure through some of the most bizarre and fascinating science experiments from making water rise against gravity, turning milk into plastic, having ping pong balls levitate, or standing on paper cups without breaking them and more! We will witness amazing reactions, create ooey-gooey mixtures, and explore the strange properties of everyday materials. Campers will learn skills for problem solving, creative thinking, decision making, measuring and classifying materials.

3) Adventures in Art Instructor: Anne O'Connor

Session 1 9:00 Grades 2-3
 10:30 Grades K-1

This class is for children who love to experiment with art materials. We will emphasize techniques that create surprising and exciting effects and rich textures, such as marbling, monoprints, painted-paper collages, melted-crayon drawings, scratchboard and more. We will draw, paint, sculpt, squirt, swirl, roll and stamp and let the element of discovery enhance our creativity. By creating animations with some of our drawings and collages, we will see our art in motion!

4) STEAM Art Studio Instructor: Anne O'Connor

Session 2 9:00 Grades 2-3
 10:30 Grades K-1

If you are an artist with a scientific bent, or a scientist or engineer with artistic inclinations, this is the class for you! Discover how changing the shape of an object can make it stronger as you build bridges, castles, and treehouses. Develop your understanding of potential and kinetic energy, gravity and friction as you design and decorate a race car or construct a beautifully painted marble run. You can capture a rainbow on paper using refraction, create a spectacular volcanic landscape with acid-base reactions, make a mesmerizing sensory bottle exploring the varying densities of liquids and solids, and learn about viscosity while testing the properties of different slime recipes.

5) Animal Kingdom Art
Instructor: Art Staff

Session 1 9:00 Grades K-2

Roar into creativity in this vibrant and interactive course. Young artists will explore the wild world of animals through various art mediums. Campers will create everything from colorful jungle paintings to clay animal sculptures, learning about different animal species and their habitats along the way. This class is a fun way to develop artistic skills and a wonderful opportunity for children to connect with nature and learn about wildlife conservation.

6) Silly Superheroes
Instructor: Art Staff

Session 1 10:30 Grades K-2

We all know reading gives you superpowers. Unleash your child's imagination in this silly superhero art class where campers read and explore books like Captain Underpants, Dogman, The Princess in Black, Superhero School, Ladybug Girl and more! Through drawing, coloring, and crafting, they'll bring to life superheroes with silly powers, costumes, and stories. This class enhances artistic skills, encourages reading and storytelling - blending the joy of art with the magic of books. Now let's go save the world!

7) Monsters Ink
Instructor: Art Staff

Session 2 9:00 Grades K-2

In this creative adventure, children explore the art of crafting their very own lovable monsters. With an array of vibrant colors and materials, campers bring their unique monsters to life. Each monster has its own personality, featuring googly eyes, silly shapes, and playful traits. They will paint, draw, and assemble their monstrous masterpieces, fostering creativity, individuality, and a sense of pride in their one-of-a-kind creations. This is a delightful and colorful introduction to the joy of creating art and embracing the limitless possibilities of the imagination.

8) Wonderland
Instructor: Art Staff

Session 2 10:30 Grades K-2

Step into the whimsical world of 'Alice in Wonderland' in our enchanting art class. In this imaginative course, children will dive into the classic tale, drawing inspiration from its iconic characters and fantastical settings to create their own magical artwork. Using a variety of mediums, from watercolors to collage, campers will capture the wonder of Alice's adventures, from the Cheshire Cat's grin to the Mad Hatter's tea party.

9) Dr. Goodbody
Instructor: Al Pearlman

Session 1 9:00 Grades 2-3
10:30 Grades K-1

Explore an amazing machine composed of thousands of working parts called the human body. In this engaging course, young learners will discover the wonders of human anatomy and physiology, from the beating heart to the powerful muscles. We will learn how different body systems work together to keep us moving, thinking, and feeling. Understand why you get dizzy when you spin around, check your blood pressure and see how you fare in our senses, lung capacity and reflex challenges. Make your own model of edible internal organs. We will schedule an exciting ambulance tour (complete with EKG machine, stretchers, blood pressure and bandaging) as part of our emergency medical experience.

10) Ocean Odyssey
Instructor: Al Pearlman

Session 2 **9:00** **Grades 2-3**
10:30 **Grades K-1**

Why is the ocean salty? How do fish and animals swim and breathe underwater? Did you know that the 5 oceans cover most of the Earth and produces half of its oxygen? Dive in to explore oceans and the fascinating marine animals and plants that live in this largest habitat on Earth. You will learn all about coral reefs, plankton, sharks, octopus, whales, all fishes and other amazing creatures that live in the ocean. Science and art experiments will help you to understand ocean life and the importance of ocean conservation and exploration. You may even get to feed and name our own classroom fish!

11) LEGO Tech Junior
Instructor: Reuben Bridges

Session 1 & 2 **9:00** **Grades K-2**

Use Legos as the inspiration to construct, investigate and communicate like little Einsteins. This interactive and educational course introduces young minds to basic scientific and engineering principles through the fun of LEGO. Students will use models to predict, observe, measure, and collect data, experiencing forces, motion, energy, mechanisms, and magnetism firsthand. They will develop complex problem-solving skills and understand the interaction between forces and motion, measurement, energy, speed (velocity) and weight (mass). Campers will construct and experiment with models of simple machines like levers, pulleys, and gears, understanding how these fundamental mechanisms make our daily lives easier.

* **Lego Fee: \$25**

12) LEGO Tech
Instructor: Reuben Bridges

Session 1 & 2 **10:30** **Grades 2-4**

Are you curious about how things work? Discover the power of engineering with Lego's Simple and Motorized Mechanisms. This course is designed to give campers an understanding of machines, mechanisms, structures, and mechanical advantage. Campers will use LEGO to build dynamic models that showcase how renewable energy sources like wind, water and solar power can be harnessed. We will investigate energy supply, transfer, accumulation, conversion and consumption through activities and building exciting real-life models. Campers will explore scientific principles and engineering concepts by creating motorized LEGO machines, gaining an understanding of how these technologies can lead to a more sustainable future.

* **Lego Fee: \$25**

13) The Illusionist
Instructor: Joseph Fields

Session 1 & 2 **10:30** **Grades 1-4**

Have you ever wanted to make a coin disappear, read someone's mind, make solid objects pass through each other or cause a rope cut in two to magically restore itself? Learn how to do this and much more by joining renowned magician Joseph Fields to uncover magic's biggest secrets, fool your friends and be the life of the party. The delightful art of balloon sculpture will also be taught. Transform yourself into an illusionist with a personalized magic briefcase full of tricks!

* **Magic Fee: \$40**

14) Checkmate
Instructor: STAFF

Session 1 & 2 9:00 Grades K-2
Session 1 & 2 10:30 Grades 1-4

Embark on a journey of strategy and critical thinking in the exciting world of chess. Chess enables children to develop and enhance their skills in discipline, concentration, and patience. Campers will learn fundamental opening, middlegame, and endgame strategies and how to achieve a proper coordination of pieces. Through interactive lessons focused on lecture, discussion and practice games, children will develop problem-solving skills, patience, pattern recognition, and sportsmanship. Chess notation will be taught in order to review games. This class is perfect for building a strong foundation in chess, setting the stage for future growth and enjoyment in this classic game of skill and intellect.

15) Pixicade Game Maker
Instructor: STEM STAFF

Session 2 9:00 Grades 2-3
10:30 Grades K-1

Have you ever wanted to create your own video game? Do you like to doodle or draw? In this class you will learn how to make your very own video games using Pixicade! All you need to do is draw, then watch your doodles magically come to life as playable games. Campers will learn to use the exciting new Pixicade App and all its editing and Power-Up features! This exciting class will teach campers game mechanics and concepts through STEAM and literacy exploration and mini drawing lessons. At the end of the session campers will have a collection of games they created from the stories, characters, goals, worlds, hazards, and game challenges developed in class.

* Pixicade Kit Fee: \$30

16) Blast Off!
Instructor: STEM STAFF

Session 1 9:00 Grades K-2
10:30 Grades K-2

Would you like to be an astronaut or go on a mission to Mars? Join us for a thrilling journey through the cosmos in this out-of-this-world class! Campers will learn about the solar system, the moon, rockets and more as we travel through the solar system! We will create art based on our intergalactic travels and explore the wonders of the universe, from the swirling galaxies to the twinkling stars. Through fun activities and experiments, children will learn about complex concepts like gravity and the life cycle of stars. Campers will gain foundational knowledge in astronomy and develop a lasting fascination with the mysteries of space.

17) Matilda Jr.
Artistic Director: Anne Pasquale
Musical Director: Regina Talbot

Session 1 9:00 Grades 1-4
10:30 Grades 4-9

Take the stage in our vibrant theater class, where students will perform in 'Matilda Jr.', a musical adaptation of Roald Dahl's beloved story. Immerse yourself in the story of Matilda, a brilliant, resilient girl with a vivid imagination. Unloved by her cruel parents, cherished by Miss Honey, and tortured by the school's mean headmistress, Miss Trunchbull, Matilda uses her courage and cleverness! Campers will develop their acting, singing, and dancing skills as they bring this enchanting story to life, exploring themes of friendship, justice, and standing up for what's right. The course culminates in a full production, showcasing the talents of our young actors and memorable tunes like When I grow Up and Naughty in a performance that's as magical as it is empowering in this Broadway Junior adaptation.

* Script, score, costume and materials fee: \$50

18) KP The Reluctant Dragon
Artistic Director: Anne Pasquale

Session 2 **9:00** **Grades 1-4**
10:30 **Grades 4-9**

Dive into a world of fantasy and music in our theater class, where students will bring to life 'The Reluctant Dragon' using a blend of puppetry and the hit songs of Katy Perry. This imaginative class offers a fresh take on the classic tale, telling the story of a peace-loving dragon through vibrant characters and energetic, catchy tunes like Roar and Firework. As they sing, dance, campers will develop their theatrical skills, creativity, and confidence. This unique combination of storytelling elements promises an exhilarating and memorable experience, culminating in a whimsical and lively performance that audiences will adore.

*** Script, score, costume and materials fee: \$50**

19) Architecture and Design with 3Dux
Instructor: STAFF

Session 1 & 2 **9:00** **Grades K-2**
10:30 **Grades 2-4**

Join us in this illuminating architecture and design class, where creativity meets construction! Using a 3Dux Design kit created for Challenge Camp, campers will focus on model design, building, problem solving, and spatial thinking to build modern structures with simple machines. You can construct kooky characters, mini bots using basic motors, a tiny house or zoo with pulleys and levers or a sustainable community using wind turbines and solar power. Older campers will learn basic electrical engineering and circuitry concepts as we light up our projects. Designers will unleash their imagination balancing form and function in this building bonanza of imagination. The possibilities are endless!

*** Architecture Kit Fee: \$50**

20) Math Mania
Instructor: STAFF

Session 2 **9:00** **Grades 2-3**
10:30 **Grades K-1**

Math Mania, a lively and engaging class created to make math fun. Through a mix of games, puzzles, and interactive activities, young learners will explore basic and more advanced math concepts introducing mathematical vocabulary and analytical skills for younger numbers fans! By turning math into a hands on adventure, this class builds a strong logic foundation and will help develop campers' curiosity, skill and confidence to take on any math challenges.

21) Around the World
Instructor: Rathi Gulati

Session 1 **9:00** **Grades 2-4**
10:30 **Grades K-2**

Travel around all seven continents in one camp session! The trips are planned, and your tickets have been purchased, but where in the world are you going? Follow the clues on our map to help us get to our destination. You will make your own passport and board a plane to explore each country as you solve the riddles that lead you to them. At each destination you will sample the food, listen to the music, play the games, enjoy the stories, create the art and celebrate the holidays of that country. If you have always wondered about life in faraway lands, then pack your bags as we take a terrific trip around the world!

22) Minecraft City Builders**Instructor: STEM Staff****Session 1 9:00 Grades 1-3****Session 1 & 2 10:30 Grades 1-3**

How are cities planned? Who decides what a building looks like and where it should go? What role do parks and other public spaces play in a city? What are the integral components of cities that they need to function? Campers will plan, design and build a city using Minecraft Education edition! Minecraft will be used to enhance creativity, problem-solving, self-direction, and collaboration skills.

23) Little Fashionistas**Instructor: Linda Andrews****Session 1 9:00 Grades 2-4****10:30 Grades 4-6**

Welcome to 'Little Fashionistas', a dazzling fashion class where campers can unleash their creativity and style. In this exciting course, young designers will learn the basics of fashion design, from sketching and color theory to fabric selection and accessory creation. Through hands-on projects and inspiring activities, they will bring their own fashion ideas to life, crafting everything from mood boards and custom t-shirts to their very own accessory pieces. This class encourages creativity and self-expression while giving budding fashionistas a taste of the glamorous world of fashion design.

*** Fashion Fee: \$40****24) Fashion Reimagined: The Art of Upcycling****Instructor: Uvana Doran****Session 2 10:30 Grades 2-4**

Turn a basic garment into the next season's fashion must-have! Aspiring designers will learn how to take ordinary fashion "basics" and turn them into one-of-a-kind fashion pieces. With the help of a sewing machine, hand-sewing techniques, and decorative trims, designers will learn about the upcycling process to give new life to existing clothing items as a reimagined runway garment!

*** Fashion Fee: \$30****25) Photo Finish****Instructor: Liz Steger-Hartzman****Session 1 & 2 9:00 Grades 3-9**

This exciting class will teach the fundamentals of basic digital photography to capture images throughout the camp or home setting. Campers are required to have a fully charged digital camera or cell phone camera. Each day, Liz will teach you all you need to know to develop your photographic eye. Class time will be spent learning technique, shooting pictures and creating your portfolio for weekly contests. Each camper will receive a personal printed portfolio featuring their best work.

26) Fun with Photoshop**Instructor: Liz Steger-Hartzman****Session 1 & 2 10:30 Grades 5-9**

Have you ever wondered how funny pictures are made? Have you seen a cat's head looking natural on a person's body? What about the imperfect photo made perfect? In this class you will learn about all of the tools to enhance your pictures and make fun photos. Topics include basic image editing, transformation, retouching, enhancement, and compositing taught by a professional photographer. Campers will work on their own portfolios and participate in group projects. We will be working in Photoshop CC and students participating in Photo Finish will learn advanced techniques.

*** Photoshop Fee: \$50**

27) Junior Entrepreneur
Instructor: Sid Jain

Session 1 **9:00** **Grades 3-5**
10:30 **Grades 5-9**

Have you ever wanted to run your own small business and make your own design, plan, price and sales decisions? Campers will enter the “shark tank” and become entrepreneurs building an idea from scratch and ending with a business plan. You will generate a product or service and decide how to market and advertise. After honing your analytical, logical and communication skills, you will be able to confidently present your plan to "investors" from Wall Street and raise play-money. Learning practical and operational aspects of the stock market, campers will determine the most viable businesses. Entrepreneurs will also brainstorm ideas for the Challenge Cares Carnival. The money raised will be used for the charitable entity chosen by Challenge Camp.

28) CITYScapes
Instructor: Ana Saura

Session 1 **9:00** **Grades 4-9**

Create your own three-dimensional artwork à la Charles Fazzino! After being introduced to magnificent Mayan, European and Asian architectural styles, you will design an imaginary city and using this fascinating technique, will create a cityscape that will literally POP off the page! This program integrates an appreciation of architecture with learning how to design, plan and produce 3-D art.

29) MOMA Painting
Instructor: Ana Saura

Session 1 **10:30** **Grades 4-9**

A painting class inspired by the great impressionistic masters, we will create unique paintings studying different techniques of color, drawing and paint style used in pointillism. Drawing on the techniques from Georges Seurat, Camille Pissarro, and Paul Signac masters of the unique art of creating images with small, distinct dots of color. Campers will learn about the history and science behind this fascinating style to create their own vibrant masterpieces. This course teaches a unique artistic technique that encourages patience, attention to detail, and an appreciation for the pioneering work of these famous artists.

30) Pop Art Painting
Instructor: Linda Andrews

Session 2 **9:00** **Grades 3-9**

Immerse your child in the bold and vibrant world of Pop Art in our exciting painting class, inspired by the iconic styles of Andy Warhol and Roy Lichtenstein. This class explores the dynamic and colorful world of Pop Art, teaching campers to create art that pops with vivid colors and bold lines. Made on canvas, these inspired, bright and modern works of art will allow you to spark your imagination and creativity. We will use paper, magazines, plastics and more to complete your pop art paintings. It's a perfect blend of art history and creative expression, encouraging children to see the world around them through a bright and imaginative lens.

31) Gelli Printmaking**Session 2 10:30 Grades 3-9****Instructor: Linda Andrews**

Dive into the vibrant and playful world of gelli printmaking. This hands-on course introduces the fun and versatile technique of gelli printing, where campers will use gelatin plates to create unique and colorful prints. They will experiment with textures, patterns, and shapes, learning how to layer colors and forms to produce their own artistic masterpieces.

Printmaking Fee: \$25**32) Code Central: JavaScript Animation and Design****Session 1 & 2 9:00 Grades 3-6****Instructor: Neil Grand**

Learn coding basics while having fun creating animation, games and sketch art. We will be using a version of JavaScript known as p5.js. JavaScript is the most widely used computer programming language and the backbone to most web pages. p5.js makes coding fun and easy for artists, designers and beginners. In less than 15 lines, you will be able to create an arrow shooting across the screen or a waterfall of balloons of different sizes and colors bouncing around the screen (and needing to be popped!) p5.js is great for visual learners. Learn how to create variables, loops and algorithms.

33) The Illusionist 2**Session 1 & 2 9:00 Grades 4-9****Instructor: Joseph Fields**

Would you like to perform like Criss Angel, David Blaine, and David Copperfield? If you would, this is your chance to discover the magic secrets that these and many other professionals use to baffle audiences worldwide. Join Joseph Fields this summer and learn the secrets, the sleight of hand and the proverbial tricks of the trade that helped make these professionals famous. Imagination, individuality and creativity will be encouraged to develop a personal magical act with polished showmanship. Extraordinary and advanced balloon sculpture techniques will be learned! Advanced magical secrets of illusion, levitation and sleight-of-hand will highlight this course as well as presentation and performance before an audience. Enhance your skills and transform yourself into a master illusionist with your personalized magic briefcase full of tricks.

Magic Fee: \$50**34) Drone Flight School****Session 2 9:00 Grades 2-5****Instructor: Drone Cadets****Session 1 & 2 10:30 Grades 3-9**

This beginning drone class will explore the various uses of drones. They can be used for delivery, surveillance and security, aerial photography, filmmaking and more! In Drone Flight School, campers will receive practical, hands-on instruction that gives them the exciting experience of flying a drone through obstacles, while learning the FAA required rules and safety procedures. As their skills progress, they will begin coding autonomous drone flight to promote further STEM learning and provide real-world career insights. Campers will fly and take home their pre-assembled drones! Drone Cadets spark the bright young minds of students of all ages and light up new pathways for further scientific exploration.

Drone Fee: \$350

35) Edison Robotics
Instructor: STEM Staff

Session 2 9:00 Grades 2-4

Enter the world of robotics and coding with Edison Robotics. The Edison robot is a powerful, engaging tool for teaching children computational thinking and computer programming in a hands-on way. Campers can immerse themselves in a variety of STEM and engineering projects as they learn to build and invent. Using the EdBlocks and EdScratch software, these programmable robots will open up the world of coding and bring computer science to life. Students will take home their kit to continue exploring with Edison.

*** Robot fee: \$75**

36) Dash Robotics
Instructor: STEM Staff

Session 1 9:00 Grades 4-5
10:30 Grades 2-3

Woohoo! Meet Dash, an innovative robot that will make learning to code fun. Responding to voice, navigating objects, dancing, and singing, Dash is the robot you always dreamed of having. Campers will use Wonder, Blockly, and other apps to create new behaviors for Dash from navigate mazes, to respond to voice commands, and even dance - doing more with robotics than ever possible. Each class is packed with fun and educational activities that not only teach the fundamentals of programming logic but also encourage problem-solving, creativity, and teamwork. Let Dash open a canvas for exploration and collaboration by unleashing your creativity as you program Dash to greet you, deliver a message to a friend, follow you on a journey, and become a true partner in fun.

*** Robot Fee: \$175**

37) Podcast Kidz
Instructor: Kirk Petrie

Session 1 & 2 9:00 Grades 4-9

Enter the exciting world of podcasting with our class designed for budding broadcasters. In this interactive course, students will learn the ins and outs of creating a podcast, from developing content ideas to recording and editing audio. Learn how to tell stories about your favorite topics ranging from sports, news, fashion, books, comedy, video games to discuss "on-air". Choose topics that go from serious to silly, from fun to frightening and everything in between. We will learn how to write, improvise, interview, and edit your own recording in our podcasting studio. We will discover the various platforms to allow you to share your broadcasts with friends and family all over the world.

38) Recording in Session w/ Garageband
Instructor: Kirk Petrie

Session 1 & 2 10:30 Grades 4-9

Discover the rhythm of creativity in our GarageBand music-making class. This engaging and hands-on course introduces the basics of digital music production using the intuitive GarageBand software. Students will learn to compose, edit, and mix their own tracks, experimenting with a wide range of instruments and sounds. It's an ideal blend of technology and artistry, perfect for inspiring young musicians to explore their musical talents and express themselves through unique compositions.

39) Escape Room
Instructor: Jennifer Walford

Session 1 **9:00** **Grades 4-9**
10:30 **Grades 4-9**

Unlock the mystery in our escape room class, a unique and exhilarating course designed for campers to search for clues and solve several kinds of puzzles and riddles to plot their great escape. This class blends puzzle-solving, teamwork, and critical thinking, as students work together to solve challenging scenarios and 'escape' from various themed rooms. They will develop key skills such as logical reasoning, collaboration, and quick decision-making, all while immersed in thrilling, story-driven environments. It is a perfect blend of education and adventure, encouraging students to think creatively and work effectively under pressure. This is an experience that will be remembered for a lifetime... assuming you ever make it out!

40) Digital Film Academy
Instructor: Tony Ely

Session 1 **9:00** **Grades 6-9**
10:30 **Grades 4-5**

Let's make movies! In this interactive digital movie making class students will participate in the full creative process of developing an original professional short film. With a professional Director leading the production, campers will be part of a high-quality collaborative team effort to brainstorm ideas and costumes, write, location scout, shoot, direct, act and edit their film. Campers will gain an enhanced understanding of digital media while learning appropriate and responsible use of technology to become good digital citizens. We can't wait to see the premiere!

Film Fee: \$50

41) Cardboard Engineering
Instructor: Hudson Apotheker

Session 1 **9:00** **Grades 5-9**
10:30 **Grades 3-5**

Enter the Challenge Makerspace to engage in a fan favorite medium... Cardboard! Campers will invent and create a variety of projects utilizing simple yet versatile cardboard as a base. Campers will learn and apply electrical, civil, and mechanical engineering to develop sample projects such as mini cities, foosball/carnival games, suits of historical armor, and even bridges capable of withstanding hundreds of pounds. Art, science, and engineering will come together to provide children with an interdisciplinary way to indulge their passions in our collaborative learning environment.

Engineering Fee: \$75

42) Challenge Makerspace
Instructor: Hudson Apotheker

Session 2 **9:00** **Grades 5-9**
10:30 **Grades 3-5**

Are you eager to create and experiment utilizing engineering principles? Challenge Camp Makerspace provides a creative way for students to design, experiment, build, and invent in a science, engineering and tinkering environment. In this project-based STEAM class, campers will work in a collaborative environment and develop their problem-solving skills. Woodworking, electricity, as well as force and motion will all be explored through hands-on projects. Sample activities may include building catapults, model electric cars and creating our own electric motors.

Makerspace Fee: \$75

43) Radical Chemistry
Instructor: STEM STAFF

Session 1 **9:00** **Grades 3-5**
10:30 **Grades 5-9**

Experience the exciting world of molecules and reactions in our hands-on Chemistry class. This dynamic course brings the periodic table to life through interactive experiments and engaging lab activities. Students will explore fundamental concepts like chemical bonding, reactions, and the properties of different elements, all while conducting safe and supervised experiments that illustrate the principles of chemistry in action. We will learn about crystallization by studying rock candy, exothermic reactions by making elephant's toothpaste and acid base reactions by blowing up a balloon with a water bottle. This is the perfect environment for young scientists to ignite their curiosity, develop practical lab skills, and gain a deeper appreciation for the science that shapes our world.

44) NASA Globe: Microclimates
Instructor: STEM STAFF

Session 1 & 2 **9:00** **Grades 5-9**
10:30 **Grades 3-5**

Discover the intricate world of microclimates in this engaging earth science class as part of the NASA Globe Citizen Science program. Our microclimates exploration delves into the fascinating study of small-scale climate variations, examining how air, soil, surface, and water temperatures interact to create unique environments. Using the methodologies and resources of the NASA Globe program to perform hands-on experiments, field observations, data analysis and reporting, campers will explore how microclimates affect local ecosystems and weather patterns. This is an ideal class for budding environmental scientists, inspiring campers to appreciate and understand the complexity and diversity of the Earth's ecosystems.

45) Adventures in the Lab
Instructor: STEM STAFF

Session 2 **9:00** **Grades 3-5**
10:30 **Grades 5-9**

Are you fascinated by science? Embark on an exciting journey of discovery in this dynamic science class where we will perform hands-on experiments. We will learn about different chemical compounds, conduct demonstrations to observe different chemical principles, and make science come alive. In this immersive course, young scientists will explore a variety of scientific fields, from chemistry and biology to physics and earth sciences, through engaging and interactive experiments. Each day in the lab is an adventure, as students conduct experiments, analyze results, and learn to think like real scientists. This class not only deepens their scientific knowledge but also fosters critical thinking, curiosity, and a lifelong love for learning and exploration.

46) Grand Prix
Instructor: STEM STAFF

Session 2 **9:00** **Grades 5-9**

Prepare to break into the world of Real Radio Control. We will build an introductory model car which will feature powerful electric motors, actual suspensions and rechargeable batteries for "never-ending" fun in competition. Materials fee includes: 1/10th scale radio control model car, 2 channel radio, 2 rechargeable batteries, AC/DC Battery charger, paint, and necessary tools. Assembly, finishing, customizing, tuning up and participating in competitions are just a few of the skills you will learn in this unlimited world of radio control modeling.

Supply Fee: \$300

47) Off Road Racers
Instructor: STEM STAFF

Session 2 10:30 Grades 5-9

Take racing Off Road in this Radio Control model building class. We will build a 4WD Buggy model car featuring powerful electric motors, a double wishbone suspension, and fiberglass shock towers to take your racing off road! Materials fee includes: 1/10th scale radio control model off road buggy, 2 channel radio, 2 rechargeable batteries, AC/DC Battery charger, paint, and necessary tools. Assembly, finishing, customizing, tuning up and participating in competitions are just a few of the skills you will learn in building this radio-controlled, off road racer.

Supply Fee: \$300

48) The Great Debate
Instructor: Sara Teimor Charles

Session 2 9:00 Grades 4-9

Step into the world of persuasive arguments and critical thinking. In this dynamic and interactive course, campers learn the art of constructing compelling arguments, conducting research, and speaking confidently in public. We will tackle a range of topics, from current events to ethical dilemmas, engaging in spirited debates that hone their reasoning and listening skills. This class boosts oratory prowess and fosters a deeper understanding of diverse perspectives, preparing campers for future academic and personal challenges. Get ready to be engaged in the great debate!

49) Model United Nations
Instructor: Sara Teimor Charles

Session 2 10:30 Grades 5-9

Dive into the world of diplomacy and international relations with our Model United Nations class. In this class, campers will step into the shoes of UN delegates, learning about global issues, international politics, and the art of negotiation and public speaking. Through simulating UN conferences and debates, we will develop skills in research, diplomacy, and collaboration, while gaining a deeper understanding of world affairs. This enriching experience educates students about the complexities of global governance and empowers them to become informed and active global citizens.

50) Sew What?! Sewing Bootcamp
Instructor: Uvana Doran

Session 2 9:00 Grades 4-9

Do you dream of becoming a fashion designer? In this class, students will be introduced to the process of creating clothes! Sewing students will learn to draft, pin, and cut a sewing pattern, how to use a home sewing machine and even how to take measurements. Students will complete a final project involving the designing and sewing of shorts, pajama pants, or a reversible tote bag. All items will be personalized to show off each camper's unique style. Project Runway, here we come!

Fashion Fee: \$50

51) 3D Printing Lab
Instructor: STEM STAFF

Session 1 & 2 9:00 Grades 4-9
Session 1 & 2 10:30 Grades 4-9

This course is designed to introduce 3D modeling and printing techniques to beginners. Campers will learn an overview of the components of the printer and how the process works. They will learn how to navigate a variety of 3D design software including the popular TinkerCad, Cura and Meshmixer to develop their own 3D models. In this project-based course the students will learn the possibilities for creativity are endless and will take home a printer and filament to continue inventing.

3D Printer and Filament Fee: \$400

52) Drone Racing Club
Instructor: Drone Cadets

Session 1 9:00 Grades 5-9

Drone Racing is one of the hottest and fastest growing esports in the nation. In this exciting technical course, we will build a First Person View (FPV) Racing Drone. Campers will learn how to fly from an FPV perspective, as if you were in the cockpit and practice flying and racing techniques, including races of our own! With practice, campers will master this advanced flight skill and begin racing in real life. We will address safe and ethical uses of drones and learn to be responsible drone operators and owners. Each camper will assemble and keep their own fully-functional drone and FPV goggles. Ready, set, drone!

*** Drone Fee: \$550**

53) Code Central: Introduction to Java
Instructor: Neil Grand

Session 1 & 2 10:30 Grades 4-9

This course aims to teach the basics of one of the most powerful and wide spread programming languages—Java. You will learn about variables, loops, control structures (if/then logic), arrays and how to write classes. You will learn to think both algorithmically and creatively. We will use Java to calculate PI, and solve problems – for example, did the Native Americans get a good deal when they sold Manhattan to the Dutch for \$24 in 1626? We will create games like Mad Libs, guess the state capitals, and how to convert English into Pig Latin. There are no prerequisites other than a desire to learn.

54) Minecraft: Challenge Camp Edition
Instructor: STEM Staff

Session 1 & 2 9:00 Grades 4-9
Session 2 10:30 Grades 4-9

Minecraft combines easy to use graphics and game play coupled with multi-player in several different modes accessible to learn at different levels. Journey from simple game play, to more complex world creation and server hosting. Campers will work together to create their own computer-generated worlds with an almost infinite combination or primitive mechanical devices, electrical circuits, and logic gates built with an in-game materials known as Redstone. Using teamwork to create a world from the ground up, Minecraft will serve as a gateway to enlighten students how to safely and securely utilize technology involved in game creation. Many aspects of the computer science and information systems worlds will be introduced including, but not limited to, software programming, overall concepts and principles of networking and the hardware required in building these seemingly complex systems.

PLEASE HAVE A CURRENT MINECRAFT ACCOUNT PRIOR TO THE START OF CAMP

55) PC Builders Academy
Instructor: Andrew Schomber

Session 1 10:30 Grades 5-9

Unleash your inner tech wizard as you dive into the world of PC assembly and customization! In this course, we won't just teach you how to build a computer; we will guide you through the exciting journey of crafting your own cutting-edge PC. From the sleek, blank canvas of a bare case to the heart of the machine – the motherboard – and all the way to fine-tuning the operating system and software, you will be the mastermind behind your very own lightning-fast PC. Bid farewell to that outdated desktop as you upgrade to a personalized powerhouse. Are you ready to build, tweak, and conquer the digital realm?

Computer Fee: \$900

56) Machine Learning and Artificial Intelligence
Instructor: Andrew Schomber

Session 1 & 2 9:00 Grades 5-9

This year Chat GPT has generated headlines, but how do you teach a computer to follow your instructions? Machine learning is the science of getting computers to act without being explicitly programmed. Researchers think it is the best way to make progress towards human-level Artificial Intelligence, and in the past decade, machine learning has given us self-driving cars, practical speech recognition, and effective web search. You will learn to use Google's Teachable Machines software which lets you create computer programs that can make decisions based on setting you "teach". You can use images, sounds or motions to control the outcome using this cutting edge technology.

57) Engineering Design Thinking
Instructor: STEM Staff

Session 2 9:00 Grades 3-5
10:30 Grades 5-9

Unlock the world of innovation and problem-solving with our Engineering Design Thinking class. In this interactive course, students will learn the fundamentals of design thinking, a methodology used by engineers and innovators to solve complex problems. They will engage in hands-on projects, from conceptualizing and prototyping to testing and refining their designs, tackling real-world challenges in creative ways. This class not only enhances their understanding of engineering principles but also fosters critical thinking, collaboration, and a mindset geared towards innovation and continuous improvement.

58) YouTube Content Creator
Instructor: STAFF

Session 2 9:00 Grades 6-9
10:30 Grades 4-6

Like and subscribe to this inventive class and show off your creative talent. Campers will develop the tools they need to create a sustainable YouTube or Twitch channel. Campers will learn how to create serialized content about areas that interests them. Topics explored include how to develop an audience and how to generate an on-camera personality. The course will give campers the digital skills of basic video editing and proper green screen use. Media ethics and strategies for staying safe online will be prioritized.

