SUMMER 2024

K-12
Summer Camps
High School Classes
STEM Research Experience
Teen Internships

Science Discovery
UNIVERSITY OF COLORADO **BOULDER**

ONLINE REGISTRATION OPENS JANUARY 10!

Discover, Create, Explore: THE ULTIMATE STEM ADVENTURE AWAITS

Calling all future scientists, engineers, and creatives! Get ready to embark on an explorative journey with CU Science Discovery's sensational summer camps and high school classes. Fill your summer with hands-on STEM experiences that are sure to ignite your passion for learning. At Science Discovery, we believe in the power of creativity, questions, and the joy of discovery.

Share this digital summer catalog with the K-12 science enthusiasts in your life and start planning your summer right away.

ONLINE REGISTRATION OPENS JANUARY 10!

Note: This catalog contains summer 2024 schedules and basic program descriptions. For complete details on Science Discovery policies (including cancellation, transfer, and medication administration policies), frequently asked questions, scholarship information and more, please visit:

https://www.colorado.edu/sciencediscovery/

Questions?

scidisc@colorado.edu
303-492-7188

Note: These are 2-day camps.

		June 3-7	June 10-14	June 17-18	June 20-21	June 24-28	July 8-12	July 15-19	July 22-26	July 29-August 2
GRADES K-2	Diggin' Dinos + Newton's Playground							9-4		
	Diggin' Dinos + Up and Atom	9-4								
	Nature Explorers			9-4						
	Ocean Discovery + Tinker Tots									9-4
	Rainforest Expedition + Taking Flight					9-4				
	Rainforest Expedition + Up and Atom								9-4	
	Rockets for Junior Astronauts		9-4			9-4	9-4		9-4	
	What's Buggin You? + Newton's Playground		9-4							
	What's Buggin You? + Taking Flight						9-4			
	Wild in the Woods				9-4					
GRADES 2-4	Adventure Time							9-12		9-12
	Boulder Botanists				9-4					
	Life in Ponds and Streams			9-4						
	Robot Playground		1-4							1-4
	Science Magic		9-12					1-4		
	STEAMfest	9-4					9-4			
GRADES 3-5	Birds, Beaks, and Beyond				9-4					
	Bishops, Pawns, and Rooks, Oh My!					9-12			9-12	
	Boulder Rocks			9-4						
	LEGO Engineering	1-4								9-12
	Math Games and Puzzles from Around the World					1-4			1-4	
	Minecraft EDU							1-4		1-4
	Muggle Magic: The Science of Harry Potter		9-4			9-4	9-4		9-4	
	Sphero Robotics Mini Golf	9-12						9-12		
GRADES 4-6	Cosmic Explorers							1-4		
	DIY Playhouse								9-4	
	Escape Room: Puzzles and Ciphers	1-4				9-12				
	Explore the Force: The Science of Star Wars	9-12								1-4
	Power the Future			9-4	9-4					
	Minecraft: Astronomy Adventures							9-12		
	Science in Motion		9-4					9-4		
	Scratch Stories and Games					1-4	9-12			
	Stop-Motion Animation						1-4			9-12
GRADES 6-8	ABCs of DNA						9-12			
	Arduino: An Introduction						1-4			
	Board Game Design					1-4		1-4		
	Capture This! Nature Photography	9-12							1-4	
	Comic Book			9-4	9-4					9-4
	Go Viral Using Video Magic					9-12			9-12	
	LEGO Spike Prime Robotics	1-4								1-4
	Micro:bit Project Design		9-12					9-12		
	Minecraft: Mission to Mars	9-12								1-4
	Programming with Python		1-4							9-12
	Video Game Design Using Flowlab	1-4								

K-2 CAMPS for JUNIOR SCIENTISTS

June 3-7	Diggin' Dinos + Up and Atom	9am-4pm	$575
June 10-14	What's Buggin' You + Newton's Playground	9am-4pm	$575
June 17-18	Nature Explorers (Note: This is a 2-day camp.)	9am-4pm	$235
June 20-21	Wild in the Woods (Note: This is a 2-day camp.)	9am-4pm	$235
June 24-28	Rainforest Expedition + Taking Flight	9am-4pm	$575
July 8-12	What's Buggin' You + Taking Flight	9am-4pm	$575
July 15-19	Diggin' Dinos + Newton's Playground	9am-4pm	$575
July 22-26	Rainforest Expedition + Up and Atom	9am-4pm	$575
July 29-August 2	Ocean Discovery + Tinker Tots	9am-4pm	$575

☐ **DIGGIN' DINOS**
Location: Science Discovery

Calling all junior paleontologists! Want to learn about Colorado's ferocious, fossilized past? This is the camp for you! We'll learn how fossils are formed and make our own dinosaur fossils to take home. Create and design dinosaur wearables and stomp around playing dinosaur games. Bring along your detective skills as we piece together clues about the past—everything from T-Rex tracks to Edmontosaurus eggs—and discover how we know so much about them today.

☐ **NEWTON'S PLAYGROUND**
Location: Science Discovery

Calling all future physicists! Have you ever wondered why a thrown ball moves in a curved path? Why you can hear but not see around corners? Why magnets stick to a refrigerator? In this camp, we'll explore the world around us through the laws of physics. Get your hands and your imaginations ready as we answer these and other questions by playing with wooden cars, spinning tops, Slinkies, balloons, colored lights, and so much more.

☐ **OCEAN DISCOVERY**
Location: Science Discovery

Explore the great mysteries of our oceans! Through simple experiments and hands-on activities, we'll learn how waves work, why sharks are so awesome, why oceans are getting saltier, and what kinds of bizarre wildlife make the ocean their home. We'll learn about deep-sea ecosystems, bioluminescence, and the everyday household products that come from the sea. We'll also build an elaborate ocean mural throughout the week, creating new sea creatures each day, including sea snails, sea turtles, sharks, and jellyfish. Campers, please come ready to learn, color, paint, and have fun! For the budding sea explorer, you won't want to miss this introduction to the wild world of ocean dynamics.

☐ **RAINFOREST EXPEDITION**
Location: Science Discovery

From the decomposers of the lush forest floor to the blue morpho butterflies and majestic macaws that glide though the emergent layer, the rainforest is home to more species of plants and animals than any other terrestrial ecosystem! Come learn all about the weather, forest structure, and biodiversity that make the rainforest such a magical place to live. Be prepared to gain a richer understanding of the biology of this unique biome and things that you can do at home to be a rainforest hero!

SCIENCE DISCOVERY'S
LONGEST-RUNNING
CAMP

40 YEARS... and counting!

☐ **ROCKETS for JUNIOR ASTRONAUTS**
June 10-14; 9am-4pm
June 24-28; 9am-4pm
July 8-12; 9am-4pm
July 22-26; 9am-4pm
$575
Location: Fiske Planetarium

3, 2, 1 – BLAST OFF! Spend the week at Fiske Planetarium learning about flight on earth and into space, rocket design, and life as an astronaut in our longest-running summer camp. Leading up to camp week, be sure to set aside a variety of clean recyclables—as we learn more about rockets and space, we'll construct our very own hand-made, life-sized rockets. Storybooks will spark our engineering imaginations as we explore making simple machines to enhance our rocket ship designs. We'll close out our week by inviting our families to help us launch our rockets into outer space together at Fiske Planetarium!

☐ NEW! TAKING FLIGHT
Location: Science Discovery

What do birds, kites, balloons, and jet planes have in common? They all have the ability to take flight! How, do you ask? Well, join us as we take to the skies for a week filled with experiments, hands-on activities, and a whole lot of fun exploring the physics of flight!

☐ NEW! UP AND ATOM
Location: Science Discovery

Chemical reactions are not only happening all around us, but also within us all the time. Come get ‘up and atom’ with us for a week of hands-on chemistry exploration as we take a closer look at the chemistry in our daily lives! From atoms to molecules, to elements and compounds, we’ll explore states of matter, create reactions using acids and bases, use a colorful method to measure pH, and even play with polymers. Let’s get our goggles and lab coats on for some chemistry fun!

☐ TINKER TOTS
Location: Science Discovery

Tinkering, the playful side of engineering, is used daily by amateurs and professionals looking to solve both simple and complex problems. In this camp, we’ll complete a series of hands-on projects as we work our way through the engineering design process. We’ll tinker with common materials in an effort to solve a plethora of problems. This is where imagination comes alive, so strap on your thinking caps and let’s get tinkering!

☐ WHAT’S BUGGIN’ YOU?
Location: Science Discovery

Did you know that more than half of the creatures on the planet are bugs!? Creepy crawlies aren’t so scary—they have amazing tricks like camouflage and even help plants grow! In this camp, we’ll explore the amazingly diverse world of insects, creating our own bug collection jars and butterfly feeders, making beehive art, engineering our own spider webs, and more!

NEW for 2024: TWO-DAY CAMPS

☐ NATURE EXPLORERS
Location: Science Discovery

This two-day camp will inspire us to take a more intentional look at the nature all around us! Nature Explorers will sharpen our observation skills as we spend the week birdwatching, identifying plants and insects, and documenting our findings in our nature observation journals like real scientists. Young naturalists will have a blast as we uncover the wild world that exists in our very own community. Let’s grab our magnifying glasses and start exploring!

☐ WILD IN THE WOODS
Location: Science Discovery

Come spend a week with us as we run through the meadows, soak our feet in the stream, and play among the trees. Through a variety of natural science explorations and games, we will investigate the birds, wildflowers, insects, mammals, trees and so much more. A week in the wild with friends while learning fascinating things about nature – what could be better?

2-4 CAMPS

NEW! ADVENTURE TIME
July 15-19; 9am-12pm
July 29-August 2; 9am-12pm
$285
Location: Science Discovery

Do you know what time it is? It's Adventure time! Grab your friends and sense of adventure because this is going to be one camp you wont want to miss! Each day we will embark on a new journey investiagting some of the worlds biggest phenomenons. Together we will take a scientific approach to mythical creatures, magical worlds, other galaxies; and much more!

ROBOT PLAYGROUND
June 10-14; 1-4pm
July 29-August 2; 1-4pm
$315
Location: Science Discovery

Join us to explore the fascinating world of robots with some of our favorite robotic friends, including Cubelets, Ozobots, and Dot and Dash. Through a combination of "unplugged," coding, and craft activities, we'll play with, code and create robots that make lights, sounds, drawings, and movements. Using Cubelets, we'll build, test, and rebuild robots that sense, 'think,' and act in different ways. We'll draw colorful mazes for Ozobots to navigate, and learn some coding basics as we program Dash to race, bowl, and avoid obstacles. We'll even design our own robot to help the Earth and use recycled materials to build it!

SCIENCE MAGIC
June 10-14; 9am-12pm
July 15-19; 1-4pm
$285
Location: Science Discovery

Throughout this magical week, we'll use the magic of physics, chemistry, and mathematics to learn about the natural world. We'll learn and practice a variety of exciting tricks, all based in science. Campers will explore optical illusions, turn water into juice, and magically change a flower's color. We'll crush a can without touching it, make gummy bears grow, and move objects without touching them. Once we learn these tricks, we can turn everyday objects into props for our next magic show, or use what we've learned to amaze and astonish our friends and family! During the last hour of the camp, we'll put on a show featuring some of our favorite Science Magic tricks! Parents and guardians are invited to join us.

STEAMfest
June 3-7; 9am-4pm
July 8-12; 9am-4pm
$575
Location: Science Discovery

Do you have a love for all things science? We'll spend this week exploring a variety of different STEM fields including engineering, chemistry, physics, mathematics, coding, and even art! We'll discover what's the matter with MATTER in chemistry and how it can be manipulated with physics. Students will take a day to explore robotics and coding before strapping on our engineer caps to become master builders. But we aren't done yet! Students will explore their artistic drives using clay and paper engineering to understand 2D and 3D design, ending our time together with a whole new mathematical perspective on the world around us.

NEW for 2024: TWO-DAY CAMPS

LIFE IN PONDS AND STREAMS
June 17-18; 9am-4pm
$235
Location: Science Discovery

What secrets lie beneath the surface of the streams and ponds in our community? What animal left those unusual tracks along the water's edge? What kind of nest is that between the branches above? What is the name of that insect that buried its larvae beneath the mud? Are all things in a pond or stream ecosystem somehow connected? We will answer these questions and many more as we explore the water systems found throughout Boulder County. We will look at the smallest animals under a microscope and catch larger ones with a net. We'll make a diorama of an animal in its habitat, and create cattails to learn about the importance of this plant in our local marshes. Join us for this watery outdoor adventure!

BOULDER BOTANISTS
June 20-21; 9am-4pm
$235
Location: Science Discovery

Get lost amongst the flowers for a couple of hours! Together, we will discover the incredible beauty and purpose of the plants that fill our earth. We'll take a look at cells to get a glimpse at how plants experience the world, from the colors they see to the sensations they feel. We'll take a deeper dive and explore how humans utilize plants every day for oxygen, food, and medicines. So grab your magnifying glass, your love of the plant kingdom, and your sense of adventure – there's so much to explore on a beautiful day.

3-5 CAMPS

NEW! BISHOPS, PAWNS, AND ROOKS, OH MY!

June 24-28; 9am-12pm
July 22-26; 9am-12pm
$285
Location: Science Discovery

Did you know that in the game of chess there are over 318 billion different possible positions after four moves each? The number of distinct 40-move games in chess is far greater than the number of electrons in the observable universe! Join us as we learn how chess, math, and science collide, naturally developing our critical thinking skills, expanding our abstract reasoning, challenging our creativity, and having a lot of fun!

LEGO ENGINEERING

June 3-7; 1-4pm
July 29-August 2; 9am-12pm
$285
Location: Science Discovery

Welcome to the world of LEGO Engineering, where LEGO building and mechanical engineering collide! We'll learn about the physical forces around us and figure out what it takes to create strong, stable structures as we design and build towers, bridges and houses. We'll build and test moving machines that incorporate levers, ramps, wheels, gears, and wind power. Throughout each day, we'll develop our LEGO building skills as we work with our partners to complete a series of fun design challenges.

NEW for 2024: TWO-DAY CAMPS!

BOULDER ROCKS

June 17-18; 9am-4pm
$235
Location: Science Discovery

Grab your collecting bag and bring your love of rocks, minerals, & fossils as we explore the geology of Boulder, Colorado. We will explore unique rock samples, use evidence to piece together parts of Earth's geologic past, investigate how scientists know about our planet's insides, uncover facts about how mountains are made and how glaciers carved through the Rockies, and much more! Don't miss out – this camp is going to seriously rock.

BIRDS, BEAKS AND BEYOND

June 20-21; 9am-4pm
$235
Location: Science Discovery

Attention, aspiring ornithologists! Join us for two days of fun in the classroom and in the field. We'll spend each day learning about birds - what makes them unique among animals, their many fascinating adaptations and behaviors, and how to identify them. We'll head out with binoculars and bird identification books to some trails, streams, wetlands, and ponds accessible on foot from the CU campus. We'll use our eyes and ears to locate and identify beautiful songbirds, ducks, and birds of prey. We'll look for nests, listen to songs, and create a field journal of illustrations and observations. We'll then head inside to beat the heat and dig deeper into our understanding of birds as we learn about bird morphology, behavior, and flight. Be prepared to gain a deeper interest in birds and an appreciation for the need to conserve these species and their habitats.

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MATH GAMES AND PUZZLES FROM AROUND THE WORLD

June 24-28; 1-4pm
July 22-26; 1-4pm
$285
Location: Science Discovery

Experience math in a whole new way. We'll play fun and challenging problem-solving games and puzzles from around the world, including Ancient China and Egypt, Europe, Asia, Africa and the Americas. We'll try out toothpick, tangram, and logic puzzles, play strategy games with partners, and unravel the secret of the ancient Chinese magic square. Finally, we'll help a man stuck in a pit find his way out!

MINECRAFT EDU

July 15-19; 1-4pm
July 29-August 2; 1-4pm
$315
Location: Science Discovery

Using Minecraft EDU, we'll learn to design, build and create in this collaborative digital sandbox. We'll build our own structures and worlds in response to different design prompts and learn about circuits and electricity as we use redstone to power our digital creations. We'll learn some coding fundamentals as we code our Minecraft agent, and dive into the exciting worlds of AI and cybersecurity. This camp will allow us to work together to imagine, build and create!

MUGGLE MAGIC: THE SCIENCE OF HARRY POTTER

June 10-14; 9am-4pm
June 24-28; 9am-4pm
July 8-12; 9am-4pm
July 22-26; 9am-4pm
$575
Location: Science Discovery

Join your fellow wizards-in-training as we dive into science in the wizarding world! We'll learn about circuits as we create our own light-up wand. After practicing some spells, we'll design our own spell and learn how to trick our brains with pictures that move. Our astronomy training will teach us about our sun, moon and stars. We'll enter the Potions Lab to test the consistency of troll boogers, test our taste buds with Bertie Bott's Every Flavor Beans, and learn about the science of flight as we build high-flying broomsticks. We'll close the week with an exciting game of Quidditch and cool off with a homemade batch of Butterbeer.

SPHERO ROBOTICS MINI GOLF

June 3-7; 9am-12pm
July 15-19; 9am-12pm
$315
Location: Science Discovery

Join us as we explore the world of Sphero Minis and the wide spectrum of what they can do! We'll start by learning all the ways to control Sphero's movement. From there, we'll build and test our mini golf course, design new challenges, and create our own experiments. We'll learn to use a phone or tablet to sling, tilt, and putt our robot through our obstacles. In addition to creating a mini golf course, there will be opportunities to test the limits of the Mini, and create our own stories Mini can help bring to life.

4-6 CAMPS

NEW! COSMIC EXPLORERS
July 15-19; 1-4pm
$285
Location: Fiske Planetarium

Join us as we explore the last frontier: SPACE! We will be learning about all things astronomy, and each day will focus on exciting topics, including our universe, space technology, black holes, gravity, exoplanets, the dangers of space, stars, and more! With new technology like the James Webb Telescope, our understanding of our place in the universe is changing faster than it ever has before in human history. This camp will be out of this world – join us as we take a trip into the great unknown!

ESCAPE ROOM: PUZZLES AND CIPHERS
June 3-7; 1-4pm
June 24-28; 9am-12pm
$285
Location: Science Discovery

Make and break secret codes, solve puzzles, and engineer new ones designed to stump your friends and family! Throughout the week, we'll dive into the math, science, and creative thinking used in designing and solving escape rooms. We'll explore the mathematics of cryptography, learn about different ciphers and use our new skills to decrypt and encrypt secret messages. Light, sound, and tactile clues can all play a role in communicating information in hidden ways. In addition to solving escape room puzzles, we'll also work together in teams to design our own unique escape rooms, complete with zany stories, puzzles, and props. Together, we'll play, practice, and puzzle as we work to become master cryptographers, mystery-makers, and escape artists.

DIY PLAYHOUSE
July 22-26; 9am-4pm
$575
Location: Science Discovery

This camp is a maker extravaganza all week long. We'll explore scale, simple machines, color theory, electricity, and much more, all while creating our very own customized playhouse. Each day, we will explore a different aspect of STEAM in the morning, and then use those new skills to enhance our play houses in the afternoon. Use your imagination combined with solid science concepts to make the playhouse of your dreams.

EXPLORE THE FORCE: THE SCIENCE OF STAR WARS
June 3-7; 9am-12pm
July 29-August 2; 1-4pm
$285
Location: Science Discovery

"I am one with the Force, the Force is with me." In this camp, we will take on the challenge of undergoing the Jedi Trials – learning to work our way out of sticky situations, control our minds (and others'), and create our own droids and full-sized lightsabers to take home! This STEM-focused exploration takes us from the lavas of Mustafar to the icy wastes of Hoth, and will call upon our team-building and problem-solving skills as we use lasers, coding, robots, dry ice, and chemistry to make our way across the galaxy and help those we find on our journey. Once we have the skills needed to navigate the galaxy, we will gain the rank of Jedi Knight. Friday is costume day, and we'll have an opportunity to showcase our engineering in front of a green screen and get a picture on any planet in the galaxy!

MINECRAFT: ASTRONOMY ADVENTURES
July 15-19; 9am-12pm
$315
Location: Fiske Planetarium

Interested in exploring space? Love building in Minecraft? This camp brings together the best of both worlds! Spend the week designing and building imaginative worlds in Minecraft using a special Minecraft Java Edition server to ask and answer questions about our solar system. We'll learn about exoplanets, explore astronomy exhibits, and use Minecraft to ask questions and investigate different astronomy scenarios. At the end of the week, we'll use our new knowledge and our Minecraft design skills to design a Minecraft base for exploring Mars and project our designs on the Fiske Planetarium dome!

SCRATCH STORIES AND GAMES
June 24-28; 1-4pm
July 8-12; 9am-12pm
$315
Location: Science Discovery

You're never too young to start coding! This camp introduces young campers to key computer science concepts through unplugged activities and the magical drag-and-drop block-based coding language, Scratch 3.0. Learn basic coding concepts by designing simple animations and games, and remix existing programs found in the Scratch gallery. We'll create stories in which characters interact with and respond to each other, and learn how we can control our stories and games with objects in our physical environment.

SCIENCE IN MOTION
June 10-14; 9am-4pm
July 15-19; 9am-4pm
$575
Location: Science Discovery

Mix physics and engineering with some creativity and problem solving as you build a Rube Goldberg machine—a complex device that performs a simple task in a convoluted, whimsical way. We will explore simple machines, electronics and robotics as we test gravity, friction, ramps, gears, pulleys and more, all while working in a team to construct a Rube Goldberg device. This creative engineering experience allows you to put your teamwork and problem-solving skills to use as we construct a working device that will be presented on the final day.

STOP-MOTION ANIMATION
July 8-12; 1-4pm
July 29-August 2; 9am-12pm
$315
Location: Science Discovery

Throughout this camp, we will plan, storyboard, design, and shoot our own stop-motion animated movies! Subsequently, we will explore post-production, where we'll edit our films, add music, titles, and sound effects. Along the way, we will learn some secrets for creating and producing stop-motion movies. This is an awesome opportunity to get some film and video editing experience while balancing creativity, planning and fun!

NEW for 2024: TWO-DAY CAMP

POWER THE FUTURE
June 17-18; 9am-4pm
June 20-21; 9am-4pm
$235
Location: Science Discovery

Ignite your curiosity in this hands-on exploration of renewable energy. How can we use renewable energy like wind and solar power to power our homes, cars, and communities? How can we store energy so that we have it when we need it? We'll build and test wind-powered sail cars, and use what we've learned to design more efficient wind turbines. We'll explore batteries and circuits to learn some electrical engineering fundamentals. We'll harness the power of the sun to cook s'mores and race small solar-powered cars. Join us for a week in the exciting realm of sustainable technology. Each day, we'll put our STEM skills to use by investigating a new topic, creating a special project, or solving a new challenge.

6-8 CAMPS

ABCs OF DNA
July 8-12; 9am-12pm
$285
Location: Science Discovery

We all depend on the letters D-N-A for life, but what is really spelled out by our genetic code? How do cells use DNA and why do scientists study it? During this camp, we'll inspect the structure of DNA, investigate its function, and examine variations in its code. Activities will include fun hands-on experiments and field trips. No spelling tests! Join us for an exciting exploration of a molecule essential for human life.

ARDUINO: AN INTRODUCTION
July 8-12; 1-4pm
$325
Location: Science Discovery

This hands-on camp is an introduction to physical computing using the popular Arduino microcontroller platform. Learn how to put together simple electronic circuits and write programs (Arduino "sketches") to create projects that light up, move, and make sound. We'll be using the Seeed Studio Grove Beginner Kit for Arduino, which is easy to learn while also being expandable and flexible for future projects. Added bonus: You'll be taking home your Arduino kit at the end of the camp to continue adding to your project!

BOARD GAME DESIGN
June 24-28; 1-4pm
July 15-19; 1-4pm
$285
Location: Science Discovery

Board games offer a fun and engaging way to develop skills in math, critical thinking, spatial reasoning, teamwork, and cooperation. In this class, we'll try our hand at an assortment of games, including card games, strategic games, and cooperative games, to experience different types of game play in action. Then, we'll put our creative talents to work to design our own board or card games. We'll develop a story, goal, and rules for our game, and then use a variety of Maker tools and craft and recycled materials to design a game board and make our own custom game pieces, such as markers, dice and cards. Game on!

CAPTURE THIS! NATURE PHOTOGRAPY
June 3-7; 9am-12pm
July 22-26; 1-4pm
$315
Location: Science Discovery

Let's head out into nature to capture the magic of the natural environment. *Capture This* is an introductory photography camp that bridges the great divide between the constant plugged-in world and the infinite beauty of the natural world. Whether you are a landscape enthusiast, in love with the animal kingdom, or fascinated by flora, you're bound to be captivated by this camp. We'll use point and shoot cameras to explore theories of photography. This will include learning about depth of field as well as aperture in nature and flower photography, composition in landscape photography, motion and shutter speed when photographing wildlife, and the importance of proper lighting. Spend a week capturing breathtaking scenes while combining your newfound photography skills and love of nature. Note: This is an introductory photography course.

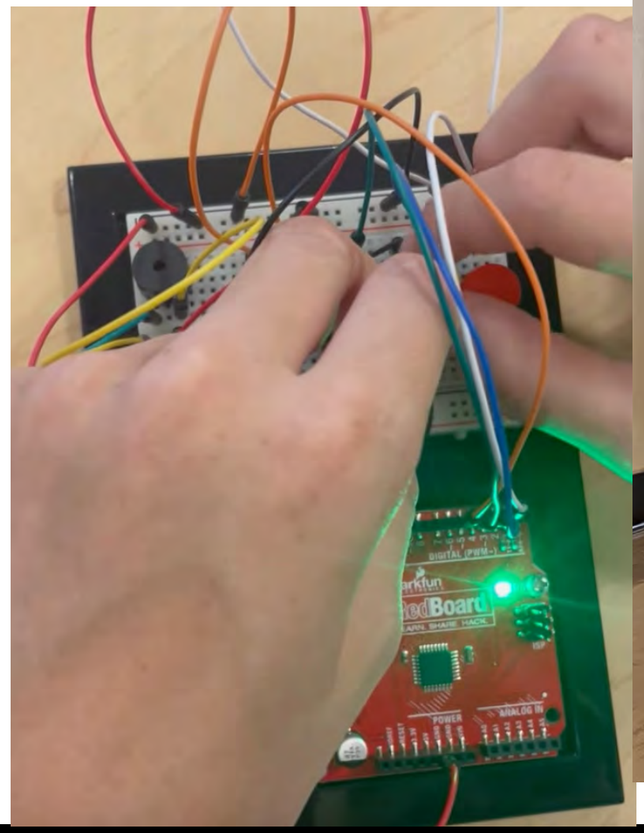
NEW! GO VIRAL USING VIDEO MAGIC
June 24-28; 9am-12pm
July 22-26; 9am-12pm
$315
Location: Science Discovery

Take a normal, everyday scene and create a sense of magic with video effects. Using techniques like green screen, replacing elements, cuts, stop motion, and masking, we will storyboard, film, edit and put the finishing touches on videos that seem unreal. You can make yourself disappear, morph, change, and reappear in this creativity-fueled camp. We'll bring the magic, and you provide the ideas you want to bring to life.

LEGO SPIKE PRIME ROBOTICS

June 3-7; 1-4pm
July 29-August 2; 1-4pm
$315
Location: Science Discovery

Learn to code with LEGO's programmable robot, Spike Prime! We'll develop our engineering and programming skills as we assemble, code, and test LEGO Spike Prime robots to complete a series of different tasks. This year, we'll use the First LEGO League Challenge Masterpiece-themed mats from 2023 as our base to complete challenges and missions. We'll design and build robots for different scenarios and learn how to control motors and use sensors. After mastering the basics, we'll work to complete more advanced design challenges. We'll learn about and apply physical science and math principles to design and maneuver our robots. The best part: no prior programming or robotics experience is required!



MICRO:BIT PROJECT DESIGN

June 10-14; 9am-12pm
July 15-19; 9am-12pm
$315
Location: Science Discovery

Welcome to the micro:bit! This little board can do it all, from driving motors and sensing the world around it to executing and interacting with the programs you can make using MakeCode, or Java and Python for those who want to take it a step further. In class, we will learn the basics of how to write simple programs with easy and forgivable drag-and-drop programming – no experience required! We'll then take those skills and use our building chops to take our inventions from the computer screen into the real world. Make your own invention that solves problems for you and your community. Want a machine that waters your plants for you? A custom game? A device that tells you the temperature outside? These and many more inventions are possible starting with the micro:bit – come learn with us!

MINECRAFT: MISSION TO MARS

June 3-7; 9am-12pm
July 29-August 2; 1-4pm
$315
Location: Fiske Planetarium

What if Earth had no moon? What if our sun were colder? Join us for a week exploring imaginative worlds and astronomy scenarios using a special Minecraft Java Edition server with tools for simulating science discovery and design. We'll learn all about space as we investigate the scientific consequences of alternative versions of Earth by asking "what if?" questions, like "What if the Earth were a moon?" We'll use our new knowledge and our Minecraft design skills to design a Minecraft base for exploring Mars and project our designs on the Fiske Planetarium dome!

PROGRAMMING WITH PYTHON

June 10-14; 1-4pm
July 29-August 2; 9am-12pm
$315
Location: Science Discovery

Python is a powerful and fast open-source programming language with numerous applications. We'll learn some basic principles of programming in Python and then apply those skills to build our own games. Please note: this camp requires knowledge of basic concepts of mathematics, such as addition, multiplication, angles, length, width, and measurement.

NEW! VIDEO GAME DESIGN USING FLOWLAB

June 3-7; 1-4pm
$315
Location: Science Discovery

Details coming soon!

HIGH SCHOOL CLASSES

AEROSPACE

June 10-14; 9:30am-3pm
June 24-28; 9:30am-3pm
July 8-12; 9:30am-3pm
July 22-26; 9:30am-3pm
$625
Location: Fleming Building

Sixteen CU Boulder astronaut affiliates have flown on forty space shuttle missions! Join some of the leaders in aerospace technologies in learning about what it takes to be an aerospace engineer. In this course, we'll meet scientists from the Laboratory for Atmospheric and Space Physics (LASP), learn about astrobiology, and plan our mission to Mars. We'll get a chance to see one of only a few university-based Mission Operations Centers, where LASP undergraduate and graduate students perform mission operations for NASA satellites totaling more than $1.5 billion in value. Additionally, we'll get a chance to work on gliders, airfoils, rocket engines, and testing composites for aircraft wings. Finally, we'll learn about alternative applications of aerospace, such as wind turbines and parachutes.

BIOTECHNOLOGY

Dates to be determined; 9:30am-3pm
$625
Location: JSCBB

This class is perfect for students who are excited about biological sciences and want to learn about meaningful career paths outside of clinical medical sciences. Over the course of our week, students will be introduced to various areas of biotechnology, listen to guest speakers, explore various career options, go on lab tours, and conduct hands-on experiments. We will explore the history of biotechnology and how it is used today in medicine, agriculture, industry, and renewable energy. Students in this course can expect to learn about lab skills, the scientific process, and how to read scientific papers. Students will have hands-on practice with electrophoresis and bacterial transformation and discuss cutting-edge areas of research, including biofuels and synthetic biology as they learn about how these impact the future of biotechnology. This class offers a great opportunity to learn about cutting-edge research going on in and around CU Boulder!

COMPUTER SCIENCE AND ROBOTICS

July 22-26; 9:30am-3pm
$625
Location: ATLAS

Through hands-on experiments, programming design, and programming development, students will learn the basics of robot motion, sensors, and control. Students will have a chance to play with several robot platforms such as Cubelets, Sphero, Dot and Dash, Redbot, and more. Each student in the class will get to use and take home their own SparkFun XRP, which includes a robot platform with Arduino microcontroller, motors, and sensors. Students will assemble their XRP robot and complete a set of experiments, ranging from learning how to maneuver their robot to using sensors. Students will participate in group activities to design, build, and demonstrate their own robot projects. Upon completion of this course, students will understand complex robot motion, sensing, and control as well as have experience with mechanical and electrical design through construction of their unique robot.

FORENSICS

Dates to be determined; 9:30am-3pm
$625
Location: JSCBB

To solve a case, detectives need to identify relevant data, work with forensic scientists to analyze scene evidence, and draw sound conclusions based on that evidence. Become a forensic scientist for the week and put your science skills to the test to solve a variety of crimes. We'll make observations and examine evidence at mock crime scenes and learn how to accurately collect important evidence. We'll use biology, chemistry, and physics to analyze fingerprints, footprints, soil, and hair, and use microscopes to examine fibers and other microscopic evidence. Throughout the week, we will work on a series of small cases and learn the scientific techniques forensic scientists use to help solve the most difficult cases.

CREATIVE TECHNOLOGY AND DESIGN

June 24-28; 9:30am-3pm
$625
Location: ATLAS

At the intersection of technology, engineering, and art, this class at the ATLAS institute will get you "hands-on" with your tech and expand your knowledge in the field of Human-Computer Interaction. The course will take students on a tour of the ATLAS labs, where students will have the opportunity to participate in hands-on building and gain practical experience in the latest technologies and techniques. Learn fundamentals of programming, circuitry, 3D design, and 3D printing in a lively, project-driven environment. Team up and create something completely new, such as an electronic musical instrument, a kinetic art installation, a piece of interactive clothing, or a computerized toy. Students will be led through a series of design challenges and lab tours aimed at learning the limits of maker technologies and be able to let their imagination run wild as they create their own mini world. Enjoy the autonomy to freely design, build, test, and interact with your creations. Building awesome stuff with tech and art has never been more fun or more approachable. This class is perfect for students who are interested in design, toys, games, and music, or who are simply curious about the potential of technology to make a positive impact on our world.

NEUROSCIENCE

Dates to be determined; 9:30am-3pm
$625
Location: JSCBB

How does the brain control all that we do, and how do scientists study this largely unknown frontier? This course will dive into topics such as sensory systems, learning and memory, and behavior, and explore numerous questions about the mind and brain from a variety of different perspectives, including anatomy and physiology, neuroscience, psychology and genetics. This course begins with an introduction to the anatomy and physiology of the brain as we learn about different brain structures and their related functions. Hands-on activities and experiments, together with laboratory tours and guest presentations, will build on this foundation and develop our understanding of the brain. We'll explore the topics of brain plasticity in the context of development and the role that genetics may play in behavior. Students will also engage in mini-experiments on topics such as memory, sensory processing, and cognitive load, in order to learn how scientists conduct research on the brain.

VIDEO GAME DESIGN USING GODOT

July 8-19; 9:30am-1pm
(Note: This is a 2-week class.)
$735
Location: ENVS

Have you ever wanted to make a video game? In this course, we will learn to create video games and write code using Godot, a free and open source game engine. We will learn some of the basic development and programming principles in Godot as well as some of the mathematical concepts needed to develop games. Students will have the opportunity to develop their own personal video game projects. No prior programming experience is required. Successful completion of Algebra I and Geometry (or comparable equivalent) are required.

ADDITIONAL HIGH SCHOOL PROGRAMS

STEM RESEARCH EXPERIENCE

JUNE 7 - JULY 26, 2024

In this 6-week program, CU Boulder and CU Anschutz faculty and graduate students act as mentors to highly motivated high school students interested in gaining real world laboratory experience.

Program participants will learn:

- What it's like to be a scientific researcher
- How to become a research scientist
- The process by which research is conducted
- How to probe data for answers to important questions

Visit the Science Discovery website for application requirements and timeline.

BUILD A BETTER BOOK INTERNSHIP I JUNE 17 - JULY 18, 2024

Build a Better Book is pleased to offer high school students the opportunity to participate in an immersive engineering and design internship focused on using Maker technologies to create accessible materials for blind or visually impaired clients.

Through the internship, interns learn about and complete projects using:

- Universal design principles, empathy-driven design and Maker technologies
- Accessibility tools and designing for disabilities
- Tactile and multi-modal learning styles
- Their newfound knowledge about blindness, vision impairments, and other disabilities

Visit the Science Discovery website for application requirements and timeline.

colorado.edu/sciencediscovery I scidisc@colorado.edu 303-492-7188 I 1560 30th St., Boulder

CU ANSCHUTZ MEDICAL CAMPUS GRADES 7-12

ABCs of DNA
Grades 7-9
June 17-21; 9am-4pm
$625
Location: CU Anschutz

We all depend on the letters D-N-A for life, but what is really spelled out by our genetic code? How do cells use DNA and why do scientists study it? During this camp, we will inspect the structure of DNA, investigate its function, and examine variations in its code. Activities will include fun hands-on experiments and interactions with Anschutz Medical Campus scientists. No spelling tests! Join us for an exciting exploration of a molecule essential for life!

INVISIBLE WORLD OF MICROBES
Grades 7-9
June 24-28; 9am-4pm
$625
Location: CU Anschutz

Come learn about the wild world of microbes inside and outside of the human body. Whether they are making us sick, keeping us healthy, or producing some of our favorite foods, microbes have a tremendous impact on our everyday lives. Together we'll investigate bacteria and viruses, how we defend ourselves from them, and try out microbiology laboratory techniques. We will also explore the coronavirus and how it interacts with our bodies and the world. This camp will give us a glimpse of what's happening in the invisible world of microbes all around us!

ANIMAL SCIENCE ADVENTURES + POISONS TO POTIONS
Grades 7-9
June 10-14; 9am-4pm
$625
Location: CU Anschutz

Animal Science Adventures explores topics such as animal behavior, care of lab animals, and hands on practice of techniques used by scientists and animal care technicians. We will conduct experiments with pill bugs, learn about careers involving laboratory animals, and tour the Anschutz Medical Campus animal facility. Camp continues with Poisons to Potions as we learn about the science of "Poisons," substances that can harm us, and "Potions," substances that can help us. We will conduct experiments using flatworms to test the effects of chemical exposure and practice pharmaceutical compounding. We will also be introduced to careers in toxicology and pharmacology, the sciences behind poisons and potions. Come on this adventure to learn how animals contribute to modern medicine and to increase your knowledge about chemicals we encounter every day!

BIOMEDICAL RESEARCH BOOTCAMP
Grades 10-12
June 10-21; 9am-4pm
Note: This is a 2-week course.
$1,150
Location: CU Anschutz

Do you have what it takes to be a biomedical scientist? Get a head start on your future coursework, internship, or research career with an introduction to biomedical laboratory techniques, visits to cutting edge facilities, exploring the ethics of biomedical research, learning about research careers, meeting scientists, and developing your own scientific research proposal. Prior knowledge of cells, DNA, RNA, and protein is helpful for the labs, but not required. Students will need to follow safety guidelines, read and follow experimental protocols, and record data in lab notebooks. If you are ready to learn about how science solves health problems in a high-intensity workout for your brain, then this research-focused course is for you!

MEDICAL STUDENT EXPERIENCE
Grades 10-12
June 24-28; 9am-4pm
$625
Location: CU Anschutz

Try this week-long course to get a small taste of the medical world. Activities may include practicing physical exams, clinical research presentations, seeing how health professionals learn with medical simulations, visiting anatomy labs, practicing suturing and injections, and more. This week is full of hands-on activities and interactions with medical trainees and professionals, giving you a fun look at the science and practice of medicine.