


UC Davis School of Education
Adventures In Enrichment

Invites You To Have a

STEM-Tastic Summer

(Science, Technology, Engineering, and Math)
7 weeks of fun and enrichment
June 13 – August 5 *(no camps the week of July 4)*

[Open to young people entering grades 2-8 in the fall of 2016]









To register or for more information, visit:
http://education.ucdavis.edu/adventures-enrichment

Join us for STEM-TASTIC SUNDAY

Jan. 31, 2016 • 1 – 4 p.m.

UC Davis Conference Center
550 Alumni Lane, Davis, CA

Meet our amazing instructors, sample the camps and register!

Flash sale, online registration, begins at 2 p.m.

Parking will be available in Lot 1A directly across from the conference center and the Gateway parking lot across from the Mondavi Center.

Flash Sale: Jan. 31 – Feb. 7, 2016

Online registration opens at 2 p.m. on Jan. 31. Take $25 off of the Early Bird Special for each regular camp and $10 off of each High Velocity Camp

Regular camps: $250
High Velocity camps: $165

Early Bird Special: Feb. 8 – April 8, 2016

Regular camps: $275
High Velocity camps: $175

Rates after April 8

Regular camps: $295
High Velocity camps: $195

Extended Day Rates

7:30-8:30 a.m. $25 per week
2-6 p.m. $45 per week





Here's what we offer!

Regular Camps: 8:30 a.m. – 2 p.m.
High Velocity Camps: 2:30 – 5:30 p.m.
Extended Days: 7:30 a.m. – 8:30 and 2 – 6 p.m.

June 13-17

Grade 2: Farmer Grady's Challenge
Grades 3-4: Wildlife Corridors Challenge
Grades 4-8: Beginning Robotics
Grades 5-8: Programming with Scratch
Grades 6-8: Rube Goldberg Apparatus
Grades 6-8: Robotics and Digital Media

High Velocity
Grades 2-5: Explorations in the World of Painting
Grades 5-8: Bridging Physical and Digital Space with Minecraft
Grades 6-8: Cardboard Installation: Constructing Community

June 20-24

Grade 2: Earthquake Technology
Grades 3-4: Digital Relay Challenge
Grades 4-8: Beginning/Intermediate Robotics
Grades 5-8: Website Development
Grades 6-8: Flight and Space
Grades 6-8: Computer Programing with STEM applications

High Velocity
Grades 2-5: Star Reader's Theater
Grades 5-8: Learn to Code with Minecraft
Grades 6-8: Kinetic Sculpture: Using Technology for Art

June 27-July 1

Grade 2: The Great Toy Challenge and Creative Innovator and Idea Makers
Grades 3-4: The Great Toy Challenge and Creative Innovator and Idea Makers
Grades 4-8: Beginning/Intermediate Robotics
Grades 5-8: Becoming a STEM Maker
Grades 6-8: Creating a Solar Powered Green Car (Part 1)
Grades 6-8: Computer Programing With Robotics

High Velocity
Grades 2-5: Arts and Craft Circus
Grades 5-8: Redstone Creations with Minecraft
Grades 6-8: Collage and Layering: Form and meaning through juxtaposition

July 11-15

Grade 2: Bug Camp 1
Grades 3-4: Rainwater Runoff Challenge
Grades 4-8: Beginning/Intermediate Robotics
Grades 5-8: Personal Genomics
Grades 6-8: Creating a Solar Powered Green Car (Part 2)

High Velocity
Grades 4-6: Circuits, Electronics, Arduino and Programming for Beginners
Grades 5-8: Living Stories with Minecraft
Grades 6-8: Ceramic Sculpture and Installation: Inspiration by place

July 18-22

Grade 2: Solar House Design Challenge
Grades 3-4: Bug Camp 2
Grades 4-8: Advanced Robotics
Grades 5-8: Science and Technology 2
Grades 6-8: Computer Aided Design for Makers

High Velocity
Grades 5-8: Bridging Physical and Digital Space with Minecraft
Grades 6-8: Texture in Clay: Nature and Manmade
Grades 6-8: Circuits, Electronics, Arduino and Programming for Beginners

July 25-29

Grade 2: Helicopter Hang Time Exploration
Grades 3-4: Young Biologist 1
Grades 4-8: Advanced Robotics
Grades 5-8: Science and Technology 1
Grades 6-8: Becoming a STEM Maker
Grades 6-8: Computer Programming and Robotics

High Velocity
Grades 2-5: Play Writer's Camp
Grades 5-8: Learn to Code with Minecraft
Grades 6-8: Sculpture: Exploring Form through Upcycling & Moldmaking

August 1-5

Grades 2-4: Young Biologist 2
Grades 4-8: Beginning Robotics
Grades 5-8: Science and Technology 2
Grades 6-8: Introduction to engineering
Grades 6-8: RoboBlockly Block based Computer Programing

High Velocity
Grades 5-8: Redstone Creations with Minecraft
Grades 6-8: Fiber Art: Fun with Textiles

Extended Day:

A Solution for Working Parents

We have the solution for parents who need their children to stay beyond the hours of the regular camp day. Our early morning option runs from 7:30-8:30 a.m. and the afternoon programs run from 2-6 p.m. This will be a more relaxed time for our campers. We will provide recreational activities, quiet games, arts and crafts and the opportunity to socialize with their friends. The cost is $25 per week for the morning program and $45 per week for the afternoon. Parents can pick up their campers anytime between 2-6 p.m. Early morning drop off is also flexible. For campers enrolled in High Velocity camps, they will be supervised from 2-2:30 p.m. and again from 5:30-6 p.m. There is no extra cost for this additional time.

STEM-Tastic Summer! – Camp Descriptions (8:30 a.m. – 2 p.m.)

(see High Velocity camp descriptions on back)

June 13-17

Farmer Grady's Challenge, Grade 2

How can a farmer protect crops when a hailstorm threatens? Campers save the day using criteria and constraints to determine which design solutions can help Farmer Grady protect his crops. They will learn about weather related hazards and how to make a claim about the merit of a design solution.

Wildlife Corridors Challenge, Grades 3-4

The Department of Roads needs help designing the animal corridor to safely move wildlife across the road. Students plan, build, and test the success of wildlife corridors under a busy road.

Beginning Robotics, Grades 4-8

Campers will design, build and program their own LEGO MINDSTORM NXT robot. The camp will focus on the elements of design and testing participant's ideas and redesigning their robots until it meets the highest standards. We will also focus on presentation skills as campers show off their robots and demonstrate it to all the parents on the last day of camp.

Programming with Scratch, Grades 5-8

Scratch is a programming language created at the MIY Media Lab that children and adults alike could use to learn fundamental concepts of computer programming simply by snapping blocks together to create projects such as animations, games, art, music, simulations and instruments of characters. Campers can experiment with new ideas and bring their imagination to life. What will they create?

Rube Goldberg Apparatus, Grades 6-8

A Rube Goldberg machine is a simple machine that accomplishes a simple task in as complicated a way as possible. Campers utilize their knowledge of simple machines and basic physics to demonstrate creativity and complexity while entertaining everyone observing it in action. If campers have ever played the game "Mouse Trap," they have used a Rube Goldberg apparatus.

Robotics and Digital Media, Grades 6-8

This camp will introduce campers to the working principles of computer programming, robotics, digital media and video editing. Campers start with the basics of how a computer works and then learn computer programming in the C/C++ interpreter CH to control a single robot and multiple robots for robot dance. Campers explore video editing and film production by creating a script, artwork, musical score and robotic choreography to be combined in a short video.

June 20-24

Earthquake Technology, Grade 2

Build Safe is planning a new apartment building, but a recent earthquake has potential residents worried about safety. Campers will learn about earthquakes and earthquake resistant technologies and they will compare models to improve designs for a new building.

Digital Relay Challenge, Grades 3-4

Millennium Mines needs help communicating its recent discovery. Campers design, build, test and redesign a code transmission system.

Beginning/Intermediate Robotics, Grades 4-8

Campers will design, build and program their own LEGO MINDSTORM NXT robot. The camp will focus on the elements of design and testing participant's ideas and redesigning their robots until it meets the highest standards. We will also focus on presentation skills as campers show off their robots and demonstrate it to all the parents on the last day of camp.

Website Development, Grades 5-8

This camp explores the world of website creation. Campers will start with "WYSIWYG" website creator and then move to creating their own website in a text editor using HTML and CSS.

Flight and Space, Grades 6-8

The exciting world of aerospace comes alive through Flight and Space. Campers explore the science behind aeronautics and use their knowledge to design, build and test and airfoil. Custom-built simulation software allows students to experience space travel.

Computer Programming with STEM Applications, Grades 6-8

Code like an engineer! This coding camp introduces campers to the working principles of computer programming through the UC Davis C-STEM Curriculum. Campers learn computer programming with a user friendly C/C++ interpreter Ch. Campers learn programming constructs, data types and declaration of variables, expressions and operators, plotting for visualization, selection statements, repetition with patterns, random numbers, and applications to math. The week ends with student teams presenting on how their comprehensive programs are developed to solve practical real-world, game, or STEM problems.

June 27-July 1

The Great Toy Challenge and Creative Innovator and Idea Makers, Grades 2 and 3-4

Campers will have the opportunity to experience two different subjects this week. The will spend half of each day in each of the camps. Both camps promise to be both fun and enriching. Campers will be divided into a second grade group and a third and fourth grade group.

The Great Toy Challenge

Sir Isaac's Toy Company wants to create a smushy, gooshy children's toy and needs help in design testing. Campers identify materials based on their properties, evaluate competitors' products and design a superior product to sell.

Creative Innovators and Idea Makers. Electronics with littleBits

Using littleBits you will play with light, sound, sensoring buttons without wiring or soldering. Learn the basics of electronics from the foundation of critical thinking or just have fun with blinking, buzzing creations. Bits snap together so it is impossible to make a mistake. Unleash your creativity and get ready to make inventions in all sizes and shapes.

Beginning/Intermediate Robotics, Grades 4-8

See description under June 20-24.

Becoming a STEM Maker, Grades 5-8

Makers are those imaginative individuals who are willing to go out on a limb and create. This course will teach campers how to design and bring their own projects to life with the help of some handy STEM topics and 3D printers. Campers will use and learn concepts revolving around design thinking and engineering. Projects will vary from highflying water rockets to sleek newly 3D printed phone cases and anything else in between. Campers are encouraged to bring their own ideas and interests into this camp.

Creating a Solar Powered Green Car, Grades 6-8

This is a two-part camp that will give campers the opportunity to digitally design a solar powered car the first week and to then actually construct the car the second week of camp. Since both weeks are interrelated, it is important that you are able to sign up for both weeks. (Week 1)

Computer Programming with Robotics, Grades 6-8

This camp introduces campers to the working principles of computer programming and robotics with applications through the UC Davis C-STEM curriculum. First, campers learn the basics of programming then how to program a robot with a user-friendly C/C++ interpreter Ch. Campers design, construct, and program their own robotic system with a single controller. Afterward, campers extend the knowledge to create complex robotic systems with multiple controllers for various different applications and challenges. The week ends with a mock-up C-STEM RoboPlay Challenge Competition.

July 11-15

Bug Camp 1, Grade 2

This is an active camp that will combine outdoor exploration, recreation and hands-on activities for our young campers. Throughout the week campers will discover how amazing and valuable bugs truly are. They will collect insects, perform experiments and activities with the insects and more. Collecting trips are interspersed with a series of fun projects and activities. This is the perfect camp for bug lovers and enthusiasts!

Rainwater Runoff Challenge, Grades 3-4

The city of lakeside needs to learn how pollution moves and how to keep it from flowing into the lake. Campers will design, build and test a model f subsoil for a rain garden.

Beginning/Intermediate Robotics, Grades 4-8

See description under June 20-24.

Personal Genomics, Grades 5-8

People come in many shapes and sizes with different traits, such as height, eye color and the ability to tolerate certain medicines. All human traits result from a combination of the genetic code and environmental influences, such as diet and exercise. Personal genomics is the field of study that looks at the influence genetic variations have on human traits. In this camp, participants will join us for a fun week of hands-on activities in the classroom and computer lab learning about human genetics and the field of personal genomics.

Creating a Solar Powered Green Car, Grades 6-8

This is a two-part camp that will give campers the opportunity to digitally design a solar powered car the first week and to then actually construct the car the second week of camp. Since both weeks are interrelated, it is important that you are able to sign up for both weeks. (Week 2)

July 18-22

Solar House Design Challenge, Grade 2

How can a builder make a house warm when the sun is shining and keep the house warm when it is not? Campers learn about energy conservation they work in teams. The teams make budget decisions about windows and flooring material in a home design as they build a passive solar house model to test, analyze and design.

Bug Camp 2, Grades 3-4

See description under July 11-15.

Advanced Robotics, Grades 4-8

You will put their creative engineering skills to the test as you work to complete building, navigation and programming missions with your NXT Mindstorm robots. In addition to the many individual challenges, campers may choose to compete with each other to build the fastest and strongest robots in the daily head-to-head competitions. Campers will also get the opportunity to meet robotics competition teams. If you already know the basics of designing, building and programming, then this camp will be a great place to work with other young robotic engineers in a fun, friendly and competitive atmosphere.

Science and Technology 2, Grades 5-8

Campers will apply the design process and knowledge of simple machines for the construction of a Rube Goldberg apparatus. Future engineers follow the steps of the design process to help them create the best possible solutions to real world problems. Rube Goldberg designs are meant to show the unnecessary complexities in machines, which sometimes result from modern technology.

Computer Aided Design for Makers, Grades 6-8

Campers will learn how to create beautiful and accurate 3d models using Autodesk's professional Fusion 360 product design software. The skills learned from this class will serve campers particularly well if they envision their future possibly involving game creation, engineering, architecture, or industrial design. The projects will be fun and challenging and include activities such as 3d printed water rocket nozzles, movie props, and collaborative projects like a totem pole challenges and anything else in between. Kids are encouraged to bring their own ideas and interests into this course!

July 25-29

Helicopter Hang Time Exploration, Grade 2

Faster is usually better, but with Helicopter Hang Time Exploration, landing slowly is the key. Campers learn about fair tests to evaluate the strengths and weaknesses of different designs of reusable paper helicopters. Then, as a team, campers design, build and test their own helicopters to land even slower.

Young Biologist 1, Grades 3-4

Through this weeklong interdisciplinary experience, participants will be introduced to the basics of general biology. Our young biologist will be immersed in topics in plant, animal and earth science, where they will eagerly experiment, explore and create. Fun and excitement is fostered by great lessons and hands-on, engaging make-and-take projects and experiments. Topics will include Paleontology, Ecology, Marine Biology, Animal Behavior, Botany, Geology and more. Campers will surely find out the biological sciences were never this much fun!

Advanced Robotics, Grades 4-8

See description under July 18-22.

Science and Technology 1, Grades 5-8

Science impacts the technology of yesterday, today and the future. Campers apply the concepts of physics, chemistry and nanotechnology to STEM activities and projects including making ice cream, cleaning up and oil spill and discovering the properties of nano-materials.

Becoming a STEM Maker, Grades 5-8

See description under June 27 – July 1.

Computer Programming and Robotics, Grades 4-6

This robotics camp explores STEM concepts through practical applications with hands-on and fun robotics activities. Campers learn how to program a robot with user-friendly C/C++ interpreter Ch. Through hands-on robotics activities; campers learn and reinforce the algebraic thinking while learning 21st Century skills. The week ends with student teams presenting on how STEM concepts are used in real-world robotics applications.

August 1-5

Young Biologist 2, Grades 2-4

See description under July 25-29. NOTE: There will be new activities, so campers from Young Biologist 1 will still be challenged.

Beginning Robotics, Grades 4-8

See description under June 13-17.

Science and Technology 2, Grades 5-8

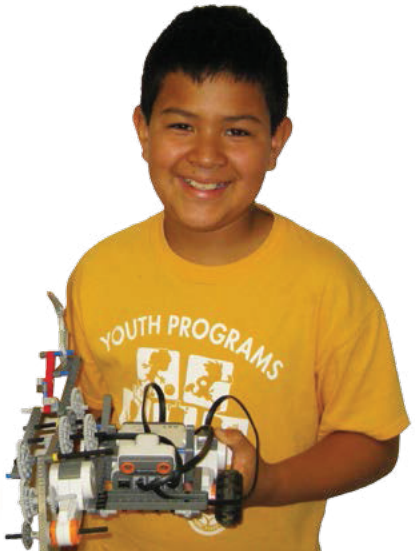
See description under July 18-22.

Introduction to Engineering, Grades 5-8

This class is an introduction to how engineers use math and science to solve problems and invent new products. Students enrolled in this week long class will learn how to design, plan, and build products primarily out of wood. Examples include a wooden notebook, The Tower of Hanoi, Tangram puzzle, and more.

RoboBlockly Block Based Computer Programming, Grades 6-8

RoboBlockly is a web-based robot simulation environment that campers will use to begin learning computer programming! The RoboBlockly environment uses a simple puzzle piece interface to program virtual Linkbot and Lego Mindstorms NXT/EV3 for beginners to learn robotics, computing, science, technology, engineering and math (C-STEM). Campers will be able to transfer their programs into text-based code and run real robots!



High Velocity Camp Descriptions (2:30 – 5:30 p.m.)

June 13-17

Explorations in the World of Painting – Grades 2-5

This class will not only familiarize the young artists with creating their own color wheels and painting, but the young artists will study and observe the different techniques that artists use in their own creations. All this knowledge and exploration will allow the young artists to be able to create their own masterpieces.

Bridging Physical and Digital Space with Minecraft – Grades 5-8

In this camp, students will create their own interpretations of real-life local public spaces. They will also be challenged to futurize their spaces, considering how they can improve the impact the impact the space has on the environment around it.

Cardboard Installation: Constructing Community – Grades 6-8

This camp will construct an entire city beginning with your very own city block. Campers will learn basic design and engineering principles while using cardboard and other mixed media to develop their project. Campers face the opportunity to create community spaces that will then be assembled into a community with public spaces and buildings. Inhabitants will be created and the cardboard city will be bustling by the end of the camp.

June 20-24

Star Reader's Theater – Grades 2-5

Sometimes all people need is a little bit more action behind words. This can be the same case with reading. So, come and join us this week, as we act out some amazing stories! This week, students have the opportunity to develop fluency and further enhance comprehension of what they are reading through reading plays/scenes, and acting them out.

Learn to Code with Minecraft – Grades 5-8

There's a new animal in town: TURTLES! Yes, turtles. In this Minecraft mod (ComputerCraftEdu) there exist powerful, but clueless, turtle robots. Students will learn the fundamentals of programming through a tile-based interface. It's a fun and new twist on Minecraft and computer programming.

Kinetic Sculpture: Using Technology for Art – Grades 6-8

This engaging camp will focus on designing and building basic kinetic sculpture. Lessons combine a bit of science and a lot of art so you can create your own whacky and fun kinetic sculpture. Learn how to hack electronics, use lights, and learn basic fabrication and sculpting techniques to design and build your moving creation. This session will be action packed!

Register Early and Save! Camps fill up quickly – don't get left out!
Registration opens January 31 at 2 p.m.

June 27-July 1

Arts and Craft Circus – Grades 2-5

Circuses are fun, exciting, and colorful, intriguing, and showcase different talents. This week, students will create art work and crafts using different materials, colors, textures, and patterns that showcase creative art forms from different eras, countries, artists, and from themselves.

Redstone Creations with Minecraft – Grades 5-8

Redstone allows players to create lights, open doors, build devices that lift stones, move water, and much more. Students will explore a pre-made world known as Redstone Mansion and begin to craft their own amazing creations.

Collage and Layering: Form and meaning through juxtaposition – Grades 6-8

The process of collage is to transform bits and pieces of materials into a cohesive whole in order to create an artwork. Juxtaposition and layering of different visual objects in artwork creates contrast, which generates meaning. Campers will enjoy creating two-dimensional and three-dimensional art by drawing from direct observation as well as using stencils, monoprints, found objects and other mixed media. Display of artwork, including framing and placement, will be introduced so students learn how to increase the visual imapct of their art.

July 11-15

Circuits, Electronics, Arduino and Programming for Beginners – Grades 4-6

This fun, hands-on camps covers everything from electricity, to electrical circuits to electrical components to programming for beginners. Many hands-on activities include: Potato Power, Squishy Circuits, making circuit cards and illuminating your designs with circuits. Learn to program and make smart computerized gadgets with Arduino.

Living Stories with Minecraft – Grades 5-8

In this camp, students will embark on a journey to create a work of literature by building a world that comes alive and tells a story using redstone, command blocks, and pressure plates. Visual and written communication as well as basic computer programming skills are strengthened through this activity.

Ceramic Sculpture and Installation: Inspiration by place – Grades 6-8

Places can inspire. Where an artwork is placed and how it is presented can dramatically change how it is interpreted and its impact on the viewer. In this camp, participants will learn the basics of clay including slab, coil, and other handbuilding techniques to create dynamic clay sculpture. Using the beauty of natural and manmade environments of the campus, campers will be inspired to create clay sculptures as well as create experimental site specific artwork from unfired clay in individual and group exercises. Students creations will be glazed and campers will be able to take home their creations once the firing process is completed.

July 18-22

Bridging Physical and Digital Space with Minecraft – Grades 5-8

See description on June 13-17

Texture in Clay: Nature and Manmade – Grades 6-8

Clay is a perfect vehicle for texture. Depending on how an artist forms it, it could be smooth and glasslike to sharp and rough. Through exploration of the natural and manmade beauty around campus along with images and examples of texture, students will create artworks. Students will learn basic clay handbuilding techniques such as slab, coil and pinch methods. Different processes to create texture will be discussed including additive and subtractive methods. Glazing and the firing process will be shown as a way to enhance the textures students have created.

Circuits, Electronics, Arduino and Programming for Beginners – Grades 6-8

See description on July 11-15

July 25-29

Play Writer's Camp – Grades 2-5

Students become excited and enthusiastic about reading when they are presented with the opportunity to participate in developing scripts, performing in groups, and practice using their voice to depict characters from texts. This week, students have the opportunity to develop fluency and further enhance comprehension of what they are reading through creating and writing their own plays, and performing them.

Learn to Code with Minecraft – Grades 5-8

See description on June 20-24

Sculpture: Exploring Form through Upcycling & Moldmaking – Grades 6-8

Campers will explore some of the principles of sculpture through the exploration of different materials and processes. They will learn the basics of form through techniques like mold making, upcycling and unexpected materials. The week will culminate with collaborative artmaking including large scale inflatable sculptures and the trading of objects that students created in their very own molds.

August 1-5

Redstone Creations with Minecraft – Grades 5-8

See description on June 27 – July 1

Fiber Art: Fun with Textiles – Grades 6-8

Textiles and fiber have been used for millennia for practical and expressive purposes. In this camp, learn techniques and artistic processes like weaving, sewing, knot making, crochet, and knitting to create sculptural textile artworks. Campers will learn about historical and contemporary uses of fiber arts. Our projects will demonstrate innovative ways of creating surface design, which is the addition of image, color, texture, and pattern applied to the surfaces of human made objects. Campers will create fiber artworks that explore the use of different surface design techniques, such as printing, dyeing, felting, sewing, drawing, and painting.

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