



Description of Mad Science of St. Louis Summer Camps 2022

Mad Science offers an assortment of weekly camps. Each camp is designed to run for up to six hours per day over the course of a week. Camps are geared toward children entering pre-kindergarten through fifth grade. Each day follows a different theme, during which the children play games, perform experiments and assist with demonstrations related to that theme. In typical Mad Science fashion, they also make something to take home with them to encourage continued exploration of scientific concepts and discovery.

This summer we will be offering the following week-long summer camps:

- Space Alien Travelers
- Rocketry Camp
- Red Hot Robots
- Secret Agent Lab
- Mad Inventors
- NASA: Journey Into Outer Space
- Underground Explorers
- Little Green Thumbs

Camp Prices per Student

Full Day (6 hours) camp, we charge \$215 per camper per week.
Half Day (3 hours) camp, we charge \$150 per camper per week.

There is a \$15 per camper material charge for Red Hot Robot camp.
There is a \$10 per camper material charge for Mad Inventors camp.



Mad Science: Space Alien Travelers (Full-Day or Half-Day)

Recommended for Ages 5-11

Take on the role of a space alien visiting Earth for the first time. Explore the most amazing planet in the universe (Way cooler than anything you would ever find in Gliese 581)! During your one week stay, you will explore the Earth's environment, study forms of communication and the science behind what Earthlings call "Sports".

Note to Parents: During our visit we will be careful observe the laws of motion as described by Earth native, Sir Isaac Newton.

Earth Awareness

Are the people on Earth hurting their planet? Discover how science will help them protect their planet. You will understand the basics of water pollution and acid rain. Use the powers of Sol (the name of Earth's sun) to make a leaf picture on our unique sun print paper. Taste your very own solar nachos (an Earthling snack food) and recycle as you create your very own paper to take home.

Mad Messages

Discover how Earthlings send secret messages using special codes! Learn about Earthing Samuel Morse's code and use it to send messages. Create your very own colorful transparency picture that shines like a rainbow. Find out how our special goldenrod paper mysteriously changes from gold to red and back!

The Science of Sport

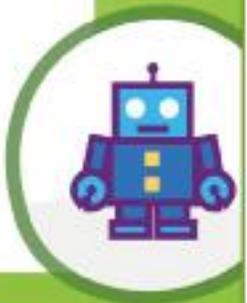
What do football players, scientists, and ballet dancers have in common? Discover how Earth's sports work using Earthling Sir Isaac Newton's Laws of Motion. Learn how Earthlings move and improve the sports we play back home. Test your theories with astroblasters and a challenging egg toss. Learn how to keep your balance as you make a balancing shooting star to take home.

Nature

While on Earth, you will be able to chuck that space suit and enjoy fresh oxygenated air! Children learn about flowers and how a white carnation can change colors. Pound real flowers into a mosaic of your own and then decorate hats to protect yourself from the sun. Learn about Earth animals, their habitats, and the foods they eat. Even create your very own cast of an animal footprint to take back home.

Returning to Space

You've made some friends on Earth and now you want to invite them back to your home planet. You will need to teach them how to live and play in space. How can they get the water to stay in the cup when it is upside down? How does a space suit work to keep them at the right temperature? Show them using our thermal space paper experiment. Demonstrate the distance between planets using toilet paper. (Just don't use too much! You are going to need it for the trip home.) Finally, we will head back toward space with the help of both a Mad Science and water bottle rocket.





Mad Science Rocketry Camp (Full-Day or Half-Day)

Recommended for Ages 5-11

This action-packed week will focus solely on rockets and the physics of rocket flight. After learning the model rocket safety code, campers will build different types of rockets and participate in rocket launches during the week-long program. Children will be divided into three groups: altitude trackers, launch preparers, and launchers for rocket launches and will get the opportunity to try different roles. We recommend this camp for children entering 2nd - 5th grade; however, children entering kindergarten and 1st grade will enjoy it as well with a little more help from fellow campers or instructors.

Note: We will launch rockets and your child will build several types of rockets. Our camp includes everything your child needs during our camp day. However, if you wish to continue your child's interest in rocket launches outside our camp, you will need to purchase a launch kit online or from a local store.

Rocket Scientists

Campers begin their journey into the world of rocketry. They will discover the parts and functions of a rocket and learn the model rocket safety code. Children will begin building bog-roll rockets and paper tiger rockets and their own altitude trackers during this exciting introduction to model rocketry.

Mission Control

Discover how balance and stability are important to rocket design. The altitude trackers children create show how high rockets fly. Children will use their feet to launch air powered rockets. Campers will become part of a launch team to assist in a rocket launch.

Astronaut Training

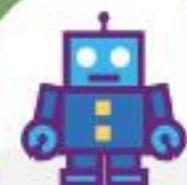
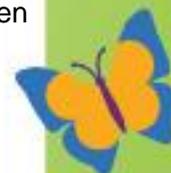
Campers will learn about the history of NASA's rocket program. They will explore what makes rockets fly, the parts of a rocket involved in flight, and how energy gets things moving! Children will make and launch mini-Flying Fizzler rockets, experiment with rubber band devices, and once again join their launch teams to launch a rocket.

Mission Recovery

Rockets can travel into space, but how are they recovered? Campers will explore the concepts of recovery systems through hands-on activities using parachutes and more. They will expand their space knowledge as they learn about Saturn and build their own model of the planet. The children will build their own Skyblazer Rocket to take home.

Go for Launch!

The final day in this week-long program will focus on rocket transportation, rocket staging and advanced rocket launches. Campers will discover the advantages of rocket staging – attaching small rockets to the tops of larger rockets, create their own version using balloons and participate in a two-stage rocket launch.





Mad Science: Red Hot Robots – (Full Day Only)

Recommended for Ages 7-11

Join us for a week of fun with amazing robots! Learn about the uses of robots in our world and spend time experimenting with super cool red-hot robots. Experiment with sound sensing robots, line-tracking robots, and more! Discover the science of circuits and how robots use sensors to explore things around them. Use your skills to build your very own working robot to take home with you! This program is open to children entering 2nd - 5th grade.

Ready for Robots

Children will explore the fundamentals of robotics and discover how robots are used through activities and games. They will begin assembling their very own robot that they will take home at the end of the week. What do gears and spirographs have in common with robots? Find out along with how a co-op-a-walk works with your friends. Campers take home their very own squiggle ball and watch it do crazy turns.

Circuit Science

Children explore the “nuts and bolts” of robots as they build simple circuits, test them, and discover how switches work. Try out a real robotic arm and mini plasma ball too! Construct your own scribble bot from scratch to take home.

Use Your Common Sensors!

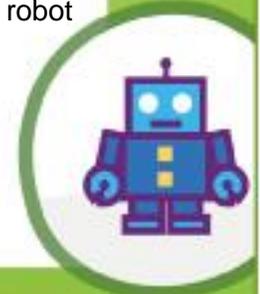
Campers see how a neodymium magnet makes a ball fly further. They will discover the world of robots is at their command as they perform various tasks. Camper build a system of snap circuits and play games that use your senses to communicate. Take home your very own circuit maze you can use and explore.

Robots 101

Learn about Asimov’s Laws of Robotics and their application to robot technology. Go on a bug hunt to learn how robots’ movements are similar to those seen in nature. Watch a model car drive right up the wall and practice with a real robotic arm. Take home a springy robot-like hand that you work with your fingers.

Advanced Robotics

Children will complete the robot that they have assembled throughout the week and test it in our obstacle course. Campers will use their imaginations to create their own robot designs and recycle materials to make a model of their design. Race our remote-control cars and discover how robots are programmed via a sequence of commands. Children will take home their robot to continue their exploration of the world of robotics.





Mad Science: Secret Agent Lab (Full-Day or Half-Day)

Recommended for Ages 5-11

The following camp description is classified as TOP SECRET:

Ever dream of becoming a secret agent? We'll start with the basics: From decoding messages to metal detectors and night vision, campers have the opportunity to check out spy tech equipment and take home lots of gadgets like spy glasses! Step into the shoes of a detective as you uncover the science involved in evidence gathering and analysis! Figure out the science of forensics in a hands-on look at crime scenes! Become a super spy and learn clever ways of performing tasks as we take a hands-on investigation of the science that spies use!

Spy Academy

Look out 007—the Mad Science spy academy is in session! From decoding messages to metal detectors and night vision, children will have the opportunity to check out spy equipment and even create their own edible messages! They will use the **Secret Code Breaker** to communicate in code, like real spies. With the **Undercover Observer**, children step into the shoes of spies in action. What looks like an ordinary camera is actually a sneaky surveillance device that lets children spy on the side.

Sleuths on the Scene

Suspects, schematics, and sleuths... oh my! Connect the dots using science to help solve a crime in this hands-on investigation of the science of sleuthing. Children will use the **Scene Solver** to reconstruct the scene of a crime. Using the **Whodunit-Kit**, they can practice their skills of recall and observation—matching character descriptions to reconstruct the face of the culprit!

Discover Detection

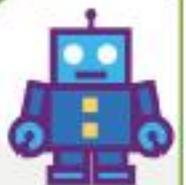
Step into the shoes of a detective—uncover the science involved in evidence gathering and analysis. Using the power of observation and the **Inspecti-Kit**, our young detectives will have all they need to get started with their investigations. Children use the gear in their kit to find, collect, and analyze evidence. Then, they will explore fingerprint analysis and use the **Fingerprint Finder** to place and identify UV prints.

Funky Forensics

Explore forensic science in this hands-on look at crime scene investigation. Children use the **Case Stamper** to stamp out a mystery on a case card and discover the science of tracking. Got clues? With the **Spynoculars**, children stealthily observe clues from afar. These build-your-own binoculars are used to test the limits of magnified observation and are a sneaky way to refine observational skills.

Science of Security

Sharpen your surveillance skills with the science of security! Children discover the science and technology behind locks, surveillance systems, and burglar alarms! They will use **Spyglasses** on short surveillance shifts to test their observational abilities.





Mad Science: Mad Inventors! (Full-Day or Half-Day)

Recommended for Ages 7-11

Creative Contraption Warning! This is a camp designed by you—the Inventor! Each day you'll be given a series of challenges which must be overcome using basic materials, simple machines, tips from world famous inventors and the most important thing of all – your mind. With a little bit of ingenuity, you'll construct catapults and forts and then lay siege, fabricate a winning Egg Drop design, construct a dancing robot and assemble a working light saber to take home. While Thomas Edison said invention is 10% inspiration and 90% perspiration, this camp is 100% fun! Note: This camp is open to children entering 2nd - 5th grade.

Rock, Paper, Scissors

It is the middle ages, and your “army” is under siege. All you have at your disposal is paper, scissors, and ... duct tape. What will you do? How will you defend your castle? How will you take the battle to their castle to vanquish your foes?

Think Fast

It took the world 100 years to go from traveling by horse and buggy to landing on the moon. You're smart—you'll do it in a day! Things will take flight during this fun-flying camp.

Shipwrecked!

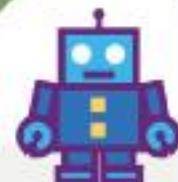
If you were stranded on a desert island, how would you survive? Well, on this day we will find out. You will need to build shelter, find food and water, protect yourself and your teammates from the elements, and find a way off the island.

Whiz Kidz

Did you know that an accident can become a great invention or that kids have created some of the gadgets we use every day? With materials that look a lot like, well ... junk, you'll be put to the test!

Science Fiction. Science Fact

Journey to the future and examine the ultramodern inventions of the 23rd century. Then design the future, today. Create your own working light saber.





NASA: Journey into Outer Space – NASA (Half-Day Only)

Recommended for Ages 5-11

From our Earth's atmosphere to the outer reaches of our solar system, this hands-on program for children ages 5-11 sends them on a quest for exploration! Comets, planets, stars and more are all waiting to be discovered. Learn about the four forces of flight, the challenges of space travel, and participate in a rocket launch!

Earth and Beyond

Explore the farthest reaches of our solar system and create a lunar eclipse in this "mad" planetary tour! Learn how the planets stack up, as we use our camp room to make a model of the solar system. Next, go on a mission to explore the atmosphere on Earth, and beyond! Travel to the end of the rainbow and make a sunset! Mix up various planetary atmospheres, one molecule at a time. Discover the wonders of air and how to trap it in a cup.

Astronaut-in-Training

Discover technology designed for outer space! Steer a laser beam through a laser maze, find hidden mountains using the principles of radar technology, and discover everyday objects that were originally designed for use in space! And that's just the beginning! Live the life of an astronaut as you suit up for space flight! Find out how much you would weigh if you lived on Neptune, and how old you would be if you lived on Saturn. Participate in a space mission as you work as a team with your fellow campers.

Solar Launch

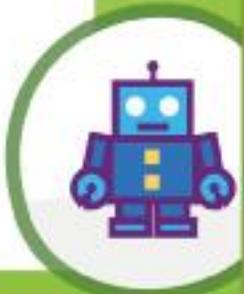
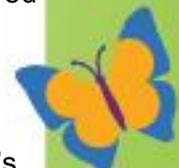
This stellar program is your ticket to the stars! Watch star dust burn, and journey through a galaxy as you investigate the life cycle of stars! Create a 3-dimensional constellation! Then, it's your chance to become a rocket scientist! Investigate the four forces of flight, and explore the science involved in rocket construction as you build your own Skyblazer II Rocket™ that you can take home!

Eye on the Sky

Probe the mysteries of meteors and bounce around satellite light in this phenomenal program on space phenomena! Learn how to tell the difference between stars, planets and satellites in the night sky. See comets up close as one is formed before your eyes. Bring far-away objects into focus as you learn about the power of lenses.

Space Voyage

Learn what it takes to be a true globetrotter! Race a balloon down a track and make a car move as you learn about thrust. See the principles of propulsion at work in a real rocket launch and take home your own propulsion device.





***NEW* Mad Science: Underground Explorers – (Half Day Only)**

Recommended for Ages 5-11

Dig up the ancient past! Solve real-life mysteries!

Kids Learn about archaeology and the techniques scientists use to excavate long lost cities! They discover ancient civilizations and the tools and artifacts they used in everyday life! They also study bone fragments, pottery shards, amber deposits, and fossils to understand what they can tell us about history! What's more, each class includes a make and take-home project, like a fossil reproduction, an amber time capsule, and coins from around the world!

History Hunters

We dig for dinosaurs! We put on our paleontology hats and go looking for historical treasure! We learn the ins-and-outs of a paleontological dig and create our own 3D fossils.

Can You Dig It?

We examine bones! We use our observational skills to piece together the puzzle and figure out what kind of animal we're examining. We learn about bone shape and function, as well as placement. We get to take home bones, so we can practice putting them together.

Pieces of our Past

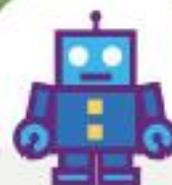
We investigate artifacts! We learn about patterns of wear, and hypothesize about the use of unfamiliar items. We get to decorate a clay pot, and use the pattern to help us reconstruct fragments of a broken pot.

Buried Stories

We study ancient civilizations! We learn about Pompeii and recreate the eruption of Mount Vesuvius. We discover how certain conditions can preserve objects and help us better understand ancient cultures and historical events.

Ancient Artifacts

We unravel time! We discover how to date objects, using techniques like carbon dating and stratigraphy. We use a metal detector to find buried coins, and then use the skills we've learned to restore them to their former glory, and figure out where they came from!





Mad Science Little Green Thumbs! (Half Day Only)

Recommended for Ages 4-5

“Little Green Thumbs!” five-session preschool camp offers young children (ages 4-5) an exciting introduction to basic environmental science. Each session is devoted to different aspects of the garden, allowing children to progressively enrich their understanding of how living things grow and how they interact with the environment around them. During the course of each three-hour session, children will perform hands-on experiments, play themed games, and enjoy a snack and story related to the session’s themes. A mural will grow through the course of the program as children illustrate their latest discoveries at the close of each session.

Soil and Seeds

The first session, children will learn *where* things grow, the different characteristics of seeds, and explore what seeds become. They will perform a seed dissection and compare their seeds to objects like pebbles, learn about the different ways that seeds are planted in nature, and how plants travel through their seeds. Children will make their own seed badges to take home!

Sun, Wind and Rain

In the second session, children will discover what types of weather are vital for a healthy garden. They will learn to identify basic weather conditions; and perform an experiment to learn about how waterfall and wind shape a garden. Children will make their very own sun visors to wear when they work in a garden!

Plants and Leaves

In the third session, children will explore the different parts of plants and leaves. They will try some activities to learn more about their characteristics, from performing leaf rubbings to add to their camp journals to examining plants and leaves under a microscope—designed for preschoolers. Children will make their very own Budding Bean necklace to take home!

Flowers, Fruits and Veggies

In the fourth session, children will investigate what plants produce. They examine the different parts of flowers, fruits, and vegetables using their microscopes, create their very own plants and flowers in their journals, and make frame-able prints of fruits and vegetables to take home!

Butterflies, Ladybugs and Bees

In the final session, children will examine the other inhabitants of the garden, including butterflies, ladybugs, and bees, and learn how these creatures help a garden grow. They will learn about pollination, how bugs see, and basic bug anatomy. They will make their own butterfly bracelets to take home, together with the camp journal that they have been working on throughout “Little Green Thumbs!” camp.

