Junior Engineers

Jr. Engineers
Check out shapes and why they are so strong! Investigate arches, and geodesic domes. Discover why an egg's shape is so strong and how you can find this shape in buildings. Test loads and build some bridges when you put on an engineer's hat and learn about structures.

Machine Mania
Find out how wedges, screws and levers help us with our daily lives. Use simple machines to complete different tasks like lifting weights and launching marshmallows. Run through an obstacle course and use teamwork to show how useful simple machines can be.

Crazy Chemistry
Become a Mad Science chemist as you learn all about the chemistry things that you encounter everyday in your house and school. Discover how chemical reactions are everywhere and how you can figure out if a chemical change has occurred right before your very eyes. Mix, mush and brew together different chemicals to create things that you can use in this hands-on outdoor chemistry lab.

The Birds & The Beasts
Where do owls live and what do they eat? How do some bugs walk on water? How do ants collect all their food? These questions and more will be answered with a walk on the wild side of things to explore: owls, birds and all kinds of bugs.

Shutterbugs!
How does a camera work? What does a lens do? How do our eyes work? What is a camera obscura? How does film capture light and store an image? How did the idea of motion pictures start and how did early filmmakers figure out how to make images move? All these questions and more will be answered in this hands-on program wherein campers get to experience all aspects of photography.

Cells, Crime & Fun

The Organ Trail

The students will be introduced to the circulatory, respiratory, digestive, skeletal, and muscular systems. In the process they will learn about some of the body's most important parts: the heart, lungs, stomach, brain and more. They will listen to their hearts, build models of their lungs and muscles, and observe the life-like replicas of real organs.

At the Scene of the Crime…

The beginning of the day introduces the campers to the notion of observation and its importance as part of the scientific method. A mock crime scene is examined, information is presented in many formats, and the challenge is to sort and sift through the data in an effort to solve the "crime." Several forensic techniques are also employed toward this effort. The end of the day brings about a conclusion to the "crime", followed by a recap of the information and methods used to ascertain what actually happened.

Cell-ebration

The campers will be introduced to several cell organelles and their functions. The membrane, mitochondria, nucleus, ribosome, and lysosome will receive most of the attention. At times they will imitate the action of each of these parts with special emphasis on the nucleus and the role of DNA in directing and recreating life. They will learn the basics of the code of life, and they will make a model of a cell including the organelles studied.

Radical Reactions

What holds atoms and molecules together? What happens to these bonds during chemical reactions? Mad scientists will use this day to study chemical reactions in depth. These reactions will include those that give off heat (exothermic), reactions that require heat (endothermic), reactions that proceed at a very fast pace, reactions that "go to far" and must try to return "home" (to equilibrium), and reactions that proceed in spite of the fact that they shouldn't.

Chemical Counting

Explore fundamental "nuts and bolts" of chemistry, starting with the principle of "chemically counting" using the chemists' unit of measure, a mole. Figure out the contents of a mystery solution using standard chemical reactions, and then campers will apply the principles of analysis in assaying real, off-the-shelf pain relief tablets for aspirin content. Cool molecular model building introduces chemical structure and bonding, and electrochemistry rounds out the day.

Rockin' Rockets

The "Wright" Stuff
Children will explore the fundamentals of aerodynamics in this hands-on program about how things fly. From the basic principles of flight to building airplanes, testing them in wind tunnels, to hovercraft and balloon copter building, children will understand what makes things fly and how different types of aircraft fly. Campers will take home a rubber band powered airplane, various paper airplane designs, balloon copters, boomerangs and mini Frisbees.

Up, Up & Away!
This program will explore the role that wind and the movement of air plays on simple flying devices such as kites, hot air balloons and parachutes. Children will experiment with solar bags, parachutes and build their own kites and windsocks during this hands-on look at early flight.

The Milky Way
What is the Milky Way and how do we know what's up there? Children will explore the celestial sphere, learn about celestial navigation and build their own sextant, sundial, planisphere and even a refracting telescope while discovering the wonders of the Milky Way.

Newton's Loco-Motion
Sir Isaac Newton was very curious about how things move. Discover Newton's Laws of Motion and something called inertia in this hands-on program all about motion. Children will experiment to learn how inertia works and how gravity is a physical force that keeps all objects "stuck" to the Earth. They will build a "gravity simulator," and an "inertia tester" to take home to continue their exploration of motion at home.

Rockin' Rockets
Campers will learn the fundamentals of rocketry throughout this day including the parts of a rocket, the stages of rocket flight and how Newton's third law applies to a rocket traveling to space. The children will build their own Estes Skywriter rockets, experiment with water rockets and stomp rockets during this fun, day filled with hands-on activities.

Mystery Minds

Mad Messages

Decipher the world around you as you learn different ways to send mad messages. Use Morse code to send secret transmissions to your friends and to interpret secret messagesfrom them. Discover the mystery of the Mad Science Message Wheel. Experiment with cool color-changing goldenrod paper.

Earth Awareness

Learn all about pollution and what it does to our planet. Determine what big problems a little pollution can cause with a lake in a bottle. Unearth pollution solutions and other ways to help our planet. Bake nachos with solar power and make your own recycled paper.

Science of Sport

Jump right into the science behind sports. Test what your toes have to do with tennis and what your feet have to do with football. Make a new friend named CG Owl and find out what he has to say about sports. See how much air your lungs can hold. Make a helmet for your own crash test egg.

Nature

Let your nose be your guide on a trail of scents. Follow the clues on this aromatic path. Experiment with natural dyes that you can find in fruits and veggies. Decorate your own painters cap with all the colors that nature has to offer. Use jaws and claws to feed your beastly stomach.

Space Day

Blast off with science as you launch a 'water bottle rocket'. Test soil for "Martian" life. Experiment with space suit design. Get a taste for space and eat like the astronauts when you make your own space snack. Learn how to throw water around and stay dry at the same time. Build your own rubber band powered space shuttle to take home.

Let's Get Growing

Soil and Seeds

Learn all about what is under your garden in this fun filled day! You will dissect soil and discover its components. Play a super seed relay game! Observe the life cycle of a seed with hands-on activities. Make your own super seed expert badge!

Sun, Wind and Rain

Investigate the elements as you discover what they do for gardens. Make your own sun visor so you will be protected from the sun. Become a weather artist using rain and wind as your tools!

Plants and Leaves

Get ready to grow! Learn all about living plants and leaves. Discover the art of rubbings. Play a leaf sorting game, as you learn about their differences. Grow your own budding bean necklace to take home with you.

Butterflies, Bees and Ladybugs

Get ready to see and make some bugs and creepy crawlers. Explore the life of a caterpillar as you discover how it turns into a beautiful butterfly. Make your own bug expert bracelet!

Flowers, Fruits, and Veggies

Welcome to the Mad Science garden! Learn super songs to sing about nature. Make a mural of the garden with your fellow campers. Bring home your own journal that you use to keep track of everything you unearthed.