

MAD SCIENCE OF PORTLAND & VANCOUVER

# in-class field trip DESCRIPTIONS

Valid October 10, 2011 through June 15, 2012

Scroll down to see workshops that are

<b>GOOD FOR all GRADES K-6</b>	<b>GOOD FOR GRADES K-2</b>	<b>GOOD FOR GRADES 3-6</b>
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**ACIDS & BASES (K-6)** - Uncover the secrets of chemistry and the effects it has on our daily lives.

**ALL ABOUT ANIMALS (K-6)** – Carnivores, herbivores and omnivores, oh my! Learn to identify sounds of the wild and domestic animal world. Explore paws and claws and the animals that use them to survive. Learn about animal adaptations as you explore the animal kingdom.

**BUGS (K-6)** – Examine a world within our own! Hear the buzz about the world’s most abundant inhabitants. Learn the parts of an insect as well as how they defend themselves. Find out exactly what it means to be bug-eyed.

**CHEM IN A FLASH (K-6)** - Hop on board the chemistry express for a high-speed science experience! Perform instantaneous experiments in this fast-paced class on split-second reactions that go like mad! **Additional Cost: \$1 per child.**

**CHE-MYSTERY (K-6)** - Eliminate the mystery in chemistry! Explore one of the most exciting and fundamental sciences as you grow a crazy crystal garden and make your own “chemical” soda pop!

**CURRENT EVENTS (K-6)** - Take a tour on the electron freeway! Conductors, insulators, transistors, and other elements in the world of circuit electricity introduce themselves to you via the tingle in your fingertips and the twinkle in your eye.

**DETECTIVE SCIENCE (K-6)** - Discover how science is used to solve real crimes! Watch as the classroom is transformed into a crime lab for this exciting exploration of the fundamentals of forensics.

**DRY ICE CAPADES (K-6)** – Manipulate matter in all of its three states! Melt metal in boiling water and freeze water with just a breath of dry ice!

**EARTHWORKS (K-6)** - Take a voyage to the center of the Earth! We’ll investigate the powerful process that shapes our planet and forms remarkable rocks, magnificent minerals, and glittering gems.

**FUN-DAMENTAL FORCES (K-6)** - Gravity...Inertia...Centripetal Force... who could ever imagine that an introduction to physics could be so much fun? We’ll experience these awesome forces for ourselves and build some cool devices to watch them at work.

**GLOW SHOW (K-6)** - Amazing discoveries come to light in this class on things that glow in the dark! Probe applications of this technology including the printing of money!

**JUNIOR REACTORS (K-6)** – Get to know your chemical reactions on an atomic level! Junior Reactors will give you a crash course in constructing the elements and substances we encounter in our everyday lives.

**LABWORKS (K-6)** - Bubbling beakers and graduated cylinders! Master the techniques of a first-rate Mad Scientist on your own student-safe lab equipment. **Additional Cost: \$1 per child.**

**LIFE IN THE SEA (K-6)** - Swim through the warm sunlit zones of the ocean, meander into deeper waters and finally dive deep down into the abyss. Explore the technologies – manmade and biological – that can take us there!

**LIGHTS, COLOR, ACTION (K-6)** - Uncover the hidden components in ordinary light and attend a spectacular chemical energy display! **Additional Cost: \$1 per child.**

**MAD SCIENCE MACHINES (K-6)** - Become a junior engineer and experiment with axles, levers, and wheels. **Additional Cost: \$1 per child.**

**MAGNETIC MAGIC (K-6)** - Investigate the invisible power of magnetic fields! Learn about the Earth as the largest magnet and put magnets to the test during the electromagnetic tug-of-war.

**MATTER OF FACT (K-6)** - Take a closer look at the nuts and bolts of the universe! Construct delicious model molecules and build, touch, and feel wacky-wild polymer molecules! Use science to achieve

**MOVIE EFFECTS (K-6)** - Grab your popcorn but don't sit back... we're going to learn first-hand how advances in science and technology make our favorite special effects possible. It's Einstein meets Spielberg in a class of 3...2...1...Action!

**MOVING MOTION (K-6)** - Discover the science behind movement! Learn how friction, inertia and other forces attract movement.

**OPTICAL ILLUSIONS (K-6)** - Build your own periscope while learning about optics, reflection and sight. Watch celebrity images change before your very eyes! Seeing is not always believing. **Additional Cost: \$1 per child.**

**PH PHACTOR (K-6)** - Slide down the colorful pH scale and dip into the world of acids and bases! Explore the pH extremes with your Reaction Tube Kit in what is sure to be a popping experience.

**ROCKET DEMO (K-6)** - Discover the dynamics of rocket flight. Take part in a safe, NASA style launching of model rockets that soar into the air and then return to earth by parachute.

**SCIENCE OF ART (K-6)** - Discover the links between science and art. See how master painters mix and separate colors and learn why their work is so valuable.

**SCIENCE OF MAGIC (K-6)** - Magic? No, its science! You'll learn the secrets behind famous magic that you can recreate for yourself! Mother nature has some tricks of her own, and we'd like to show you what's up her sleeve!

**SCIENCE OF TOYS (K-6)** - Did you know that some of your favorite toys work using basic science principles? Use classic toys to discover the science of motion.

**SLIME TIME (K-6)** - Ooze into a gooey hour of sliming around! Create slime using the Mad Science recipe, and then enter the Slime Olympics.

**SONIC SOUNDS (K-6)** - Discover sound, sound waves and the way household items can be used to create amazing movie effects...

**SPACE... THE FINAL FRONTIER (K-6)** - An exciting look at planets, moons, comets, & stars...boldly go where bright young minds love to go. **Additional Cost: \$1 per child.**

**STUNT PLANES AND GLIDERS (K-6)** - The Wright Brothers would be proud as we follow in their footsteps and learn the fundamental principles of flight. Learn to control the air surfaces and build your own loop-flying stunt plane. You'll be a Top Gun after this class.

**SUPER STICKY STUFF (K-6)** - Stick it to the walls, and push the power of tape to the limits in this adhesive hour on things that cling! Build a bond with glue and get attached to Professor Beakerdude! **Additional Cost: \$1 per child.**

**SUPER STRUCTURES (K-6)** - Discover the strengths of triangles, cylinders, and arches. Learn how combinations of these shapes make sturdy homes and skyscrapers! Build your own super structures as well as an earthquake-proof building!

**UNDER PRESSURE (K-6)** - Join Bernoulli and Newton as we take an exciting look at the science behind aerodynamics and the properties of air...under pressure. Create air pockets with a punch, and levitate ping-pong balls in defiance of gravity.

**WACKY WAVES (K-6)** - Re-create the motion of the ocean in our Mad Science Lab. Explore the power of density to make things float. Will you sink or swim?

**WALLOPING WEATHER (K-6)** - The forecast calls for meteorological mayhem in the form of thunderbolts, heavy winds, and the occasional tornado – all produced in the safety of our laboratory.

**WATTS UP (K-6)** - Learn about electricity, its properties, and its role in natural phenomena. Make indoor lightning while conducting hair-raising experiments with our electro-static generator.

### **GOOD FOR GRADES K-2**

**DECOMPOSERS (K-2)** - Dig into the world of worms! Experiment to find the ideal worm habitat. Observe worms on the move. Experience how worms eat and take home your very own worm composter!

**DINOSAURS (K-2)** - Become a Paleontologist and learn all about excavating and recovering fossils. Discover all about Dinosaurs, what they were, and what they ate and where they went.

**MAGNIFICENT MAGNETS (K-2)** - Experience the pull of magnetism. Ever been an atom in a magnet? Don't be repelled! Find out exactly what magnets like to "hang out" with. Visit the North and South poles and frolic in invisible fields. Build magnificent magnet chains and play with some of the wildest forces in the universe.

**MEASURE FOR MEASURE (K-2)** - A hands-on look at the metric system. Children will learn how to measure mass and lengths and to put these skills to the test what they have to trek through a treasure trail.

**SEEKING OUR SENSES (K-2)** - Learn to be a sense-ative person! Test your vision with our mind-boggling illusions. Navigate your nerves and give your ears a hand by amplifying sounds with your very own Mad Science Megaphone.

**SLIPPERY SCIENCE (K-2)** - Giant molecule chains called Polymers are vital to modern civilization and to life itself! Learn what makes these maverick molecules so unique and so very important. Explore, create, and play with some polymers you may already know.

**SOUND BASICS (K-2)** - The Beach Boys sang of good vibrations, and that's exactly what we'll look at! Surf sound waves, catch some, and amplify others. Play with a supersonic banger and compose a Mad Science Symphony.

**WHERE'S THE AIR (K-2)** - Bernoulli never had it so good in this fun look at air pressure and aerodynamics. Why do airplanes fly and boats float? Let's take a close, hands-on look at all sorts of neat stuff involving Bernoulli's principles.

### **GOOD FOR GRADES 3-6**

**BE TOBACCO FREE (3-6)** - Explore the effects of tobacco smoking. See first hand how it affects respiration and makes the heart work harder. Learn how tar will coat cilia in the lungs and narrow arteries.

**BLACK AND BLUE OCEANS (3-6)** - Icky, sticky oil can make quite a mess when it ends up where it shouldn't. Discover what damage it causes when it accidentally enters our environment, and devise a way to clean it up!

**CELLS (3-6)** - Get under your own skin as the Mad Scientist leads you on a journey into your body. Discover the micro-world of cells. Cytoplasm? Mitochondria? Ribosome? What are they and what job do they do for you?

**ECOSYSTEMS (3-6)** - Not all webs are made by spiders! See how plants and animals are connected and how they interact with their surroundings. Work with classmates to create your own ecosystem.

**ELECTRICITY (3-6)** - Don't insulate yourself from this electrifying class! Visit the circuit circus and discover its positives and negatives. Apply your knowledge and build your own electric fan.  
**Additional Cost: \$1 per child.**

**MINERAL MANIA (3-6)** - Discover Planet Earth! Peek behind its crust, and uncover what it's made of. Recreate the process of rock formation and learn how scientist classify and identify rocks and minerals. Experience the thrill of panning for gems that you get to take home and keep!

**MISCHIEVOUS MAGNETS (3-6)** - You'll discover that opposites really do attract in this exciting look at Magnetism. Visit the North and South poles and explore their fields! Build your very own compass, and learn how magnets can help you find your way!

**PLAYING WITH POLYMERS (3-6)** - See why chemicals have all the fun! We'll explore, create, and play with the most entertaining and useful molecule known to science, and discover its many shapes and forms! We'll even make our polymer that you get to take home and keep.

**SCIENTIFIC METHOD (3-6)** - OHEC...Observation, Hypothesis, Experiment, & Observation. Use this high-energy class to excite kids about the whole process of scientific discovery.

**TURN UP THE VOLUME (3-6)** - Children will use critical thinking skills and the scientific method to explore the concept of volume and how it is measured using the metric system.