

An abstract graphic design featuring three blue circles of varying sizes. The circles are composed of concentric layers of different shades of blue, creating a 3D effect. They are connected by thin, light blue lines that form a network. One line connects the top-left corner to the smallest circle. Another line connects the top-right corner to the largest circle. A third line connects the top-right corner to the middle circle. The background is white.

A Schmahl Science Workshop
Earth Science Workshops Catalogue

Astronomy

- **Agilent Afterschool Night and Day** The Night and Day workshop provides students with materials to construct a model of the earth-sun system and to observe the causes behind the change from night to day ... and from day to night. They observe why countries experience daylight at different times and are able to determine how often and in which direction the earth rotates on its axis. In the second half of the session, students position their flashlights such that they can model the earth-sun relationship that produces the changing seasons. The beautiful finished model is artistic and will provide a fascinating take-home model for continued investigations at home.
- **Astrolabe Construction and Navigation** If you were out on the ocean and couldn't see land anywhere around you, how would you know where you were? How did early sailors know where they were going? During this workshop, students look at navigational techniques that many explorers used.
- **Distances Between Planets** The solar system is so vast it is difficult to imagine the great distance between planets and the overall emptiness of space. This workshop introduces the earth's companion planets and has students use a manageable scale to construct a model showing how far away each planet is from the sun.
- **Fables - Chipewyan Explanation of the Seasons** Ancient Indian legends provided explanations for how the world works -- including an explanation for the seasons. This legend about the seasons will be used to introduce a science unit on the earth's movements and the seasons.
- **Fables - Goldilocks and the Three Planets/Planetary Geology** Students use the "Goldilocks Phenomenon" to loosely define the major characteristics that a planet needs to potentially support life: having just the right temperature and type of star, orbiting at just the right distance, and with just the right gravity, rotation, and chemistry. Students evaluate which variables in Goldilocks' adventure were important in selecting the items that were "just right".
- **Fables - Star lab - Native American Legends** Students experience Native American legends that stress the exploration of the sky by early stargazers.
- **Fables: Creation Fables** In the world today, there are many theories about how the earth system originated. Some theories are based on scientific facts, others are based on religion and still others are based on folklore. Most of the time, it is only when our beliefs are being challenged that we pay any attention to other beliefs or theories. To better understand what goes on in space, let we perform an experiment that will illustrate the expansion of our universe.

- Fables: Eclipse**

Nothing on earth is as awe-inspiring as an eclipse: our invincible sun, dying before our eyes, only to be reborn minutes later. Eclipses appear often in the mythology and literature of different cultures and different ages, most often as symbols of obliteration, fear, and the overthrow of the natural order of things. The word eclipse comes from a Greek word meaning "abandonment." Quite literally, an eclipse was seen as the sun abandoning the earth.
- Fables: How The Raven Made the Tides and Tidal Seas Video**

Students are exposed to the creation of the tides in the Tlingit world. The creation of the tides is essential to the existence of Tlingit, Haida, and Tsimshian people, who depend on intertidal resources for food, culture, and livelihood. Then, using hands-on investigations, students learn that the tides are the regular rising and falling of sea level.
- Mystified By The Moon**

Students investigate and understand the relative movements of the sun, Earth, and moon. Newton's first law of motion is reviewed in relation to the reason for the moon's orbit. Several kinesthetic activities review the concepts of rotation and revolution. Models are used to explore the reason we experience seasons on Earth. A combination model/kinesthetic activity explores the reason we see the phases of the moon.
- Paper Plate Education - Phases of the Moon**

Students create each of the eight phases of the moon using Oreo Cookies.
- Planetary Volcanoes**

Volcanoes on other Planets! Students explore what geologists and other scientists have learned about volcanoes on earth and other planets. How do they form? What can they tell us about planetary processes? To Pizza Pie Volcanoes, Gelatin Volcanoes and Alka Seltzer Pyroclastic Flows are some of the many hands-on activities in this workshop.
- Planets, Asteroids and Comets**

Impact cratering is a process found everywhere in the solar system. Craters are among the most fascinating features of many moons and planets. In this workshop, students experiment to find out more about what causes the various features of impact craters, including the rim of mountains around the edge, and the streaks or rays that fan out from large craters.
- Reasons for the Seasons**

The tilt of the Earth's axis causes the cycle of the seasons. In this workshop we'll discuss how different parts of the Earth receive different amounts of light energy that result in the Earth's seasons. In particular, we look at the tilt of the Earth's axis and how the hours of daylight change throughout the year.
- Simple Machines in Space - Edible Mars Spacecraft**

In 1996 two spacecraft, Mars Global Surveyor and Mars Pathfinder, were launched to Mars. These spacecraft kicked off a decade long, exploration of the Red Planet. The exploration continues with Mars spacecraft being launched every 26 months. During our workshop, students become familiar with the missions and the type of equipment on board each spacecraft as they create their own

edible spacecraft designs!

- **Solar Max Video and Sunspotter Scope** Every 11 years the sun's poles reverse with unimaginable violence. The peak of the storm is called a Solarmax. The hottest film under the sun, Solarmax is a breathtaking exploration into the awesome vastness and mysterious power of our closest star. Take a unique journey through time and space, and experience the sun's severe force and beauty. Witness a total eclipse and the magnificence of the Aurora Borealis, viewed from both Earth and space. Real images captured by the ESA/NASA SOHO satellite provide spectacular footage of the sun as never seen before. After watching the video, students observe the sun without seeing stars! This safe sun-telescope is easy to use and perfect for teaching our young scientists about sunspots.. The Sunspotter projects an image of the sun where sunspots are clearly visible.
- **Space Exploration** Your children are in charge of planning for a Mars Colony. Their mission? To insure the colony's success by bringing along enough supplies and tools to create a self-sufficient outpost of human civilization. This workshop has the makings of a world-class science project.
- **Star lab - Navigators** The AstroWizard will teach us about using the stars to navigate using his portable planetarium. Starlab dimensions: 22' x 20' x 11'. The Starlab requires two electrical outlets, and can only be used indoors. Any room used for the Starlab should have carpeted or tiled floors. Starlab accommodates approximately 20 persons.
- **Star lab - Solar System Tour** Enjoy the night sky in The AstroWizard's portable planetarium. Starlab dimensions: 22' x 20' x 11'. The Starlab requires two electrical outlets, and can only be used indoors. Any room used for the Starlab should have carpeted or tiled floors. Starlab accommodates approximately 20 persons.
- **Stereoscopic Mapping of Santa Clara County** The changes in map data collection and display that have occurred in the 20th century are comparable to the change from pedestrian to astronaut. Information that used to be collected little by little from ground observations can now be collected instantly by satellites hurtling through space, and recorded data can be flashed back to Earth at the speed of light. Remote sensing devices collect data from parts of the electromagnetic spectrum outside the narrow band of visible light. Gathering gravity, magnetic, and other data takes us beyond the electromagnetic spectrum, beyond our five senses into new territories, all of which can be mapped.
- **Sun Science** Students learn about the physical and chemical properties of the sun. Students track sunspots using our sun spotter scope; learn how spectrometers are used to determine the chemical composition of stars; and how magnetism is the key to understanding the sun.
- **Sundials** Students build their own sundials and simulate the 'time shadow' created by the rotating Earth. The shape of the earth, their location on it and how a compass works are considered in the workshop.

- The Astro Wizard Solar System Tour** AstroWizard, Dave Rodriguez, will be exploring the wonders of Outer Space. This workshop explores what makes Saturn's rings, Venus's temperature, and comets. Accompanying this lesson is a multimedia program that stresses that planets have hostile environments that are very different from that the Earth.
- Tides: Tidal Seas Video and Activities** Marine life moves to the rhythm of the sea. Students discover how the gravitational force of the sun and the moon pulls on the Earth, creating tides that rise and fall. Students learn about extreme fluctuations of temperature, salinity, and oxygen in tidal cycles and watch how tidal highs and lows affect marine life. After the video, students will do hands-on activities that will help them to understand the influence of the phases of the moon on the ocean and its inhabitants.
- Tops and Planets** What figure-skaters, planets, and neutron stars have in common? They all spin like tops! Join us, as we explore the physics behind figure-skating, planetary orbits, and the rotation of neutron stars.
- Tracking Sun Spots** Students observe the sun without seeing stars! This safe sun-telescope is easy to use and perfect for teaching our young scientists about sunspots.. The Sunspotter projects an image of the sun where sunspots are clearly visible.
- Transit of Venus** A Venus transit is a phenomenon in which the disk of the planet Venus passes like a small shadow across the face of the Sun. The transit can be seen (with proper protection!) by the unaided eye and looks something like a moving sunspot. (Sunspots take about two weeks to cross the face of the Sun, however, while Venus takes a little over six hours). Among the rarest of astronomical events, Venus transits occur eight years apart—and then don't happen again for more than a century. The last transit took place in 1882. On June 8, 2004, astronomers in many parts of the world watched as Venus moved across the disk of the Sun, one of the rarest planetary alignments. Only six Venus transits have occurred since the invention of the telescope in the 1600s. Join us as Dave Rodriguez, The AstroWizard, discusses photographing the 1882 transit.

Ecology

- **Algae Recycling System**

Algae can be as one-celled plants, and they usually live in water. You are going to use algae to look at the rate of photosynthesis. The algae are tiny and are difficult to work with directly in the water so the first part of this workshop involves 'immobilizing' the algae. This effectively traps large numbers of algal cells in 'jelly like' balls so that we can keep them in one place and not lose them. We use sodium alginate to help make the jelly. When these algae are 'wrapped up' in the jelly balls they are excellent to use in experiments on photosynthesis.
- **Green Cleaners**

Baking soda to clean sinks and vinegar remove the tarnish from your silverware? Students learn chemistry as they make environmentally friendly household cleaners. They learn some basic knowledge of chemistry: pH, Acids, Bases, Water-Soap, and Surface Tension.
- **Garbage Dump Recycling**

Each student is given a mini garbage dump (actually a cup containing salt, sand, metal, and wax) and challenged to separate the contents using sorting, filtering, and sifting techniques.
- **Home Water Survey**

While you may see warning labels on some commercial household cleaning products, you seldom find listings of ingredients, since manufacturers are not required to show them. So unless you're willing to take the time to contact the manufacturers and ask them what's in their products, it's easier to use alternatives. I will be passing out a list of alternative cleaners at the end of this workshop so that you can get rid of these toxic chemicals. Students survey their home to find out attitudes and beliefs people hold about toxics.
- **Predator-Prey Population Game**

Students play a fun game that introduces basic ecological and wildlife topics. The game teaches players about animals' diets, foraging or hunting techniques, food storage, and winter survival. Students learn about special instincts and adaptations that help animals avoid danger from predators and harsh weather.
- **Stream Table: Dangerous Dump**

Students create river models using a dripper system and diatomaceous earth, and begin to understand rivers as dynamic, ever changing systems. They will investigate the concepts of erosion, pollution, toxic waste, and human manipulation of rivers.

- **The Oil Spill**

The earth has many sources of energy. From renewable sources like the sun and the wind...to non-renewable ones like coal and oil, the earth provides for our need of energy to warm our homes, power our factories, and keep our cars moving. But certain energy sources and the processes by which we obtain them present risks to our environment. During this workshop, students create their own model of an ocean, river, or lake and allow an oil spill to occur. They investigate many different materials and attempt to contain and clean up the spill.

- **Water, Water Everywhere and Not a Drop to drink**

Students do a variety of experiments that will demonstrate the properties of water and the effects of water pollution.

Geography

- **Contour of Maps - Introduction** Using our Contour Model, students successfully transform a 3-D mountain replica into a 2-D topographic map.
- **Earth Balloon - General Earth Map Facts** Students enter the 22' (6.7m) diameter Earth Balloon through an entrance in the Pacific Ocean to learn about rain forests, the "ring of fire", time zones, population clusters, migration, man's impact on the earth, and endless other topics. The Earth Balloon is set up in your school's gym and offers students a unique way to learn about our ever changing earth.
- **Earth Balloon - Time Zones/Ben Franklin** View the Earth Like the astronauts in the space shuttle. Students enter the 22' (6.7m) diameter Earth Balloon through an entrance in the Pacific Ocean to discover time and seasons, and time zones in a new way. The Earth Balloon is set up in your school's gym and offers students a unique way to learn about our ever changing earth.
- **Finding Longitude** Using hands-on activities, students learn about the historical and scientific accomplishments that led to the discovery of an accurate measurement of longitude.
- **Gold Rush Mining Part 1** This workshop provides a series of "hands-on" activities that allows students to use key earth science concepts by conducting a mineral exploration simulating real-life economic, societal, and issue-oriented problems. The activities are designed to introduce and use topographic maps and to learn about rock types, erosion, and river dynamics. The workshop is based on the understanding that as water works along the earth's surface and through the ground; it picks up small amounts of the minerals found in the rocks and sediments. Certain minerals ionize and then travel along in the moving water and later react chemically with the surface of the river sediments. The closer the section of river is to a mineral deposit, the greater the amount of deposit detectable in the river sediments. Since it is impractical to take a class on a field trip to obtain samples, simulated river sediment samples are provided, along with detailed topographic maps of a river system in a mountainous region.

- **Gold Rush Mining Part 2 - GIS Activities**

Geographic information systems (GIS) provide a technology and method to analyze spatial data, or information about the Earth. The earth's climate, natural hazards, population, geology, vegetation, soils, land use, and other characteristics can be analyzed in a GIS using computerized maps, aerial photographs, satellite images, databases, and graphs. By analyzing phenomena about the Earth's hydrosphere, lithosphere, atmosphere, and biosphere, a GIS helps people understand patterns, linkages, and trends about our planet. The following workshop is part of GIS, A New Way to See, an article produced by the Bureau of Land Management (BLM) in cooperation with the National Science Teachers Association (NSTA). It was published in the January 2000 issue of Science & Children magazine, a publication of NSTA. Authors are Melinda Walker, Julie Casper, Frank Hissong, and Elizabeth Rieben. Students create their own maps, update their maps using new information, and then use their new maps to answer questions about the land.

- **Let's Make A Map**

While mapping their school grounds, students basic mapmaking and map-reading skills and will see how maps can answer fundamental geographic questions: "Where am I?" "What else is here?" "Where am I going?"

- **National Parks - Mt. St. Helens - Topographic Tales**

Students make observations and analyze facts to determine how the movements of three of the May 18, 1980 eruptive events were influenced by the surrounding topography.

- **Orienteering**

After learning the definition and history of orienteering, participants learn parts of the compass and how to set and follow a bearing. Distance measurement is taught through individual pacing and applied math skills. Participants will demonstrate skills while on a course. These skills will be applied to map work and the outdoor ethic they can help people obtain.

Geology

- **Alien Geology** The images of other worlds have come to us through remote sensing, cameras, radar, and other advanced means. We collect data for interpretation and extrapolation. The workshop simulates what it is like to explore an unknown land. By using a grid system and taking measurements you will be able to collect data from a simulated landscape. Students make drawings of what the landscape looks like from the data collected.
- **Clay** Students investigate the properties of very small rock particles, clay.
- **Cracking The Ice Age** Students learn that the collision of India and Asia led to the uplift of the Tibetan Plateau and the Himalayas. While topography may not be enough to explain the cooling trends, another mechanism may account for changing climate. The uplift may have caused both an increase in the global rate of chemical erosion, as well as erode fresh minerals that are rapidly transported to lower elevations, which are warmer and moister and allow chemical weathering to happen more efficiently. Through these mechanisms, then, it has been hypothesized that the tectonically driven uplift of the Tibetan Plateau and the Himalayas is the prime cause of the post-Eocene cooling trend.
- **Earthquake Wrapup: Shake The Planet** Students investigate earthquake epicenters, earthquakes and transform faults, and seismic dynamics. Students plot the position of some of the most memorable (for example, very large) earthquakes in 2004-06. They will color code them based on their Richter scale.
- **Edible Geology** This great workshop introduces students to the three types of rocks: igneous, sedimentary, and metamorphic and has some great activities you can use with your class. The edible rocks are fun, delicious, and really get the concepts across.
- **Erosion: Making a Crayon Rock Cycle** Given enough time, everything changes: mountains are built up and torn down, continents move and change shape, even rocks get worn down and reform. Imagining these changes that take millions of years is often easier for students if they model the processes in class using familiar materials. In this workshop, students model the changes in rocks over time using crayons.
- **Erosion: Rivers** Students use stream tables to gain experience with models, maps, and the concepts of erosion and deposition.
- **Exploring Clay** Students learn how people use earth materials to construct objects. They make decorative jewelry from clay, and bricks from clay soil. They go on a schoolyard field trip to look for places where earth materials occur naturally and where people have incorporated earth materials into building materials.

- **First Rocks** Students observe the similarities and differences in the materials in a river rock mixture: silt, sand, gravel, and small and large pebbles.
- **Glaciers** Have you ever wondered how something as big as a glacier can flow like a river? Whether your answer is "yes" or "no," come join us for a "cool" look at glaciers - what they're made of and how they travel.
- **National Parks - Grand Canyon - Exploring a Model River** There is only one Grand Canyon. How did it come to be? What do its rocks tell us about the earth's history? The centerpiece of our workshop is the use of stream tables to demonstrate erosion and deposition. The students do several investigations (flood, slope, etc.) based on running water over a sand/clay mixture set in a desk-sized tray. The investigations are designed so that students use the stream tables as models to understand how the Grand Canyon formed. There are also investigations on how to read and construct topographic maps.
- **Observing the Clay and Water** Students observe the properties of clay that make it useful in creating jewelry or beads.
- **Pieces of Earth** In the Pieces of Earth unit students will explore Earth materials to find 12 important rocks and minerals found on Earth. They will observe and analyze properties of minerals and develop an understanding of the rock cycle.
- **Plate Tectonics and Earthquakes** These groundbreaking earth science activities—including models of erupting volcanoes, strike-slip faults, and sea-floor spreading—reveal the dynamic nature of the Earth's crust. Like real earth scientists, students conduct "research" at key geological sites around the world and record observations, calculations, and conclusions in a geological field notebook.
- **Plate Tectonics and Volcanoes** Exploding Hair Gel, Alka Seltzer and Baking Soda Volcanoes, Fig Newton Convergent Zones and Milky Way Divergent Zones! Using these exciting and fun hands-on activities, students will learn about the types of volcanoes and how they relate to plate boundaries, what makes some volcanoes more dangerous than others, Volcanic rocks and landforms, and how volcanic eruptions affect Earth's climate and living things
- **Plate Tectonics Patterns** Students will assemble a plate tectonic puzzle.
- **River Rocks** Students investigate a river rock mixture of earth materials of different sizes. They separate the rocks, using a series of three screens to identify five sizes of rocks: large pebbles, small pebbles, large gravel, small gravel, and sand. They add water to a vial of sand to discover silt and clay.
- **Rivers Never Run Straight** The shortest distance between two points is a straight line. So this river should cut a straight path, right?

- Rock Cycle**

The Earth is active. As you are reading this information, volcanoes are erupting; earthquakes are shaking; mountains are being pushed up and are being ground down; rivers are carrying sand and mud and laying them down; and all the time huge slabs of the Earth's surface are moving - about as fast as your fingernails grow. All this Earth action is linked by the rock cycle. Find out for yourself how different parts of the rock cycle work by coming to this workshop.
- Rock ID**

Students learn how to identify and classify rocks using the MOH hardness scale, color, texture, buoyancy, and cleavage. Students learn that the properties of rocks and minerals reflect the processes that form them.
- Rocks and Minerals in Industry - Flintnapping**

Stone, surprisingly useful and beautiful in its natural state, is one of the most essential yet often overlooked tools available when it comes to survival. A naturally fractured rock becomes a simple knife. A simple unworked flake, struck from a flint core, served to scrape split maple withes for basketry or to finish the smoothing of a bow. This workshop will take you back in time to learn the ancient skills of stone tool making. Each student will begin with a hunk of rock, with no visible use, and turn it into one of the most important survival tools ever invented. And you will be introduced to several techniques and materials that will unfold a world of possibilities for the beginning or intermediate flintnapper. Focusing on the seven stages of reduction, starting with the raw materials and finishing with a useable tool, will help you to understand how various types of stone tools evolved over the course of time. This workshop will focus flintnapping and on the techniques/technologies that go into the arrow (making the shaft, using sinew, glues, fletching).
- Sand and Silt**

Indoor investigation by students into the physics of sand & silt, and the interaction between sand, silt and water.
- Sand and Silt - Observe Silt**

Students investigate sand and separate sand particles from silt particles.
- Soil Composition**

Students experience, analyze, compare and determine permeability of three different soil types. Student teams investigate and establish pH levels and concentrations of potassium, nitrogen and phosphorus in soil samples taken from surrounding fields. They observe and measure, collect and analyze data to determine the importance and value of these soils and the materials found in the soil for plant growth and life.
- Soil Detectives: The Case Of Lost Friends**

Aside from traditional science or agricultural careers, there are new fields that require knowledge of the earth and its properties. In order to solve some crimes/mysteries, forensic scientists have been required to look at the soil for clues about when or where an event took place. This career field may be a new frontier for those with knowledge of natural resources, especially

the soils. In this workshop, we will show how soils can be used to solve a mystery by looking at the physical and chemical properties of various samples.

- **Soil Explorations - Mixing and Separating Soil**
Solid rocks and soils are earth materials that have different physical properties that make them useful in different ways. Students use these properties to mix and separate the soil components.
- **Soil Testing: Texture**
Students put together and take apart soils. They are introduced to humus as an ingredient in soil. Homemade and local soils are compared.
- **Sorting River Rocks**
Students separate earth materials by size, using different techniques. The investigations provide experiences that heighten students' awareness of rocks as earth materials and natural resources. They will come to know rocks by many names and in a variety of sizes. Pebbles and sand are the same material—just different in size.
- **Using Rocks - Sand Sculptures**
Students investigate making durable sand sculptures by mixing sand with a cornstarch matrix.
- **Using Rocks- Looking at Sandpaper**
Students observe, make and compare different grades of sandpaper.
- **Volcanoes: Mapping Mount St. Helens**
Students learn topographic map skills to interpret the impact of the May 18, 1980, eruption of Mount St. Helens on the volcano's topography; construct a simple three-dimensional model of Mount St. Helens before the May 18, 1980, eruption; and draw profile views of Mount St. Helens before and after the May 18, 1980, eruption. Students use these profiles to interpret the changes in the mountain's topography that were caused by the eruption.
- **Volcanoes: Mystery Of The Supervolcano**
Students use volcanic ash data to determine the source of a possible supervolcanic eruption that occurred in the western United States.
- **Volcano's Deadly Warning**
Students learn how sound may be the key to volcanic predictions.

Paleontology

- **Dinosaur Biophysics**

Explore the wonderful world of dinosaurs. Learn about how a dinosaur lived by studying its anatomy. be amazed by the variety of dinosaur lifestyles and how a dinosaur digested its food. Discover the two main types of dinosaurs, and their great variety in size.
- **Dinosaur National Park - Fossils**

Learn about the heart of Dinosaur National Monument is its river canyons. Hands-on activities will teach students about water quality, aquatic insects and the vital role of water in our society.
- **Fossils**

How does a living thing become a fossil? The mysterious processes by which evidence of past life is preserved will be explored. By thinking about and participating in some simulated sedimentary processes, children are able to remove much of the mystery behind fossils and fossilization.
- **Paleoclimate: Climate, Corals and Change**

Students gain an understanding of planktonic foraminifera. They learn that our planet's climate has not always been as it is today. Neogloboquadrina pachyderma is an excellent recorder of climatic temperatures through geologic time. When the earth experiences periods of relatively cold temperatures, ocean waters are cooler and Neogloboquadrina pachyderma forms its test (shell) such that it coils to the left. Alternatively, during periods of relatively warm temperatures when ocean waters are warmer, Neogloboquadrina pachyderma constructs its test with a coiling direction to the right. Students also examine oxygen isotope data to look for trends and patterns in water temperature over a period of 244 years.
- **Tracking Dinosaurs**

Students practice measuring tracks, length, width and stride. We use dinosaur tracks and human (kid) tracks and then put the measurements on a chart. The literature states that the length of a dinosaur track may be 1/5 of the length from foot to hip so we will see how big our dinosaur might have been! If the weather permits, we will use finger paint on some 'volunteering' feet and put our human tracks on butcher paper to measure. We will also test the difference in stride between a walking trail and a running trail--what would you guess the difference in measurements might be?

Weather

- **Air Moves** Using our flow density demonstrator, solar wind bag and singing pipe, students will learn that hot air rises and cold air sinks and how this principle is put to use in a conduction oven. Students won't believe their eyes as they explore the powerful properties of air as you put marshmallows to the pressure test. Students are be challenged to use Bernoulli's Principle to blow up an 8-foot long bag. With a little practice they are be able to inflate the bag using only one breath!
 - **Air Pressure** Students learn that air takes up space and has weight. They learn about some basic principles about pressure and discover how pressure and temperature differences cause air to move.
 - **Preschool: Air Moves** Students learn the basic qualities of air as they experiment with Bernoulli bags, straws and flow density.
 - **Preschool Water Cycle** Students learn the process of the water cycle by becoming the different parts of the process while making it rain on their own garden.
 - **Tracking Hurricanes** Students research and compare four years of La Niña hurricanes to four years of non-La Niña hurricanes; predict the path and development of a hurricane using the hurricane predictor; support or refute the hypothesis that La Niña will result in a more intense hurricane season using the hurricane predictor as a source. Using this information, students review and improve upon their local emergency evacuation plan.
 - **Water Cycle** Air pressure can tell us about what kind of weather to expect as well. If a high pressure system is on its way, often you can expect higher temperatures and clear skies. If a low pressure system is coming, then look for colder weather, storms and rain. Our workshops introduce the concept of cloud formation and the conditions necessary for precipitation. The students will start with a quick look at part of the water cycle, and the combined gas laws. They hen progress through a hands-on/minds-on activity demonstrating the combined gas laws. Our experiments lead them through the conditions necessary for cloud formation. Students learn that weather can be observed, measured, and described. Students learn that water is a resource that needs to be conserved.
 - **Weather Instruments** Students build Galileo thermometers, and barometers.
-