CFMS MENU OF KIDS' SHOW ACTIVITIES & DISPLAY IDEAS

Making our local shows "kid friendly" helps in several ways. We cultivate interest in our hobby at a young age. We attract not just a child but a whole family when we offer fun things for the kids to do—and still more families when kids show other kids in the neighborhood the neat rock or fossil they got at the show. We attract the attention of schools and youth groups, such as Boy Scouts and Girl Scouts. And we stand a better chance of attracting local press attention if we stress that a big part of our show will be educational and family-oriented.

With all this in mind, the 2010 CFMS Juniors Activities Committee has compiled the following "menu" of kids' show activity suggestions and display ideas. These come from clubs throughout the CFMS, and all have been "kid-tested" and proven fun. We offer them here so you and your club might consider incorporating some into your next show. Also, email us with suggestions of your own: jbraceth@roadrunner.com.

You can use some activities to raise funds (particularly to help underwrite the expense to create some of these) by charging anywhere from a quarter to a dollar. Just make sure the prices are kid-friendly, and always make sure to have some activities that are free so every child can participate and have fun!

1. EDUCATIONAL DISPLAYS

Following are ideas for displays your club might create specifically aimed at educating kids. Some of these ideas will also help scouts earn merit badges in earth science. Although these are static displays, you can easily make them interactive with quiz questions to go along with them for kids to answer by studying the contents of the displays. You might reward kids who complete the quizzes with a free stone from the kids' booth or a free spin on a spinning wheel.

1.1 Rocks & Earth Processes

What is a Rock? Minerals have a unique chemical composition and structure, whereas most rocks are a mixture of different minerals. To illustrate this, create a display with a huge chunk of granite. In front of that chunk, line up the basic minerals that formed the granite: quartz crystals, mica, hornblende, and feldspar. Explain how minerals are the building blocks of rocks.

Earth Processes & the Three Rock Types. Show the three rock types and explain the Rock Cycle that produces them. A good example to use is granite (an igneous rock that solidified as magma cooled far beneath the earth) that weathers into sand (a sediment) that consolidates into sandstone (a sedimentary rock) that is squeezed by heat and pressure into quartzite (a metamorphic rock). Should it once again be dragged beneath earth's surface at a subduction zone, it could melt back into a magma state to begin the cycle all over again. These specimens could be laid out around a poster of the rock cycle. To find such a poster, just do a Google search of "rock cycle" and any number of images will pop up that can be printed onto card stock.

1.2 Minerals & Mineral Identification

Mineral Identification. Show ways we go about identifying minerals. Include a Mohs Scale chart with specimens of minerals illustrating different **hardness** from 1 to 10 (talc, gypsum, calcite, fluorite, apatite, feldspar, quartz, topaz, corundum, diamond). For **color**, show how some minerals are always one color (green malachite or blue azurite) while others vary (smoky quartz,

clear quartz, milky quartz, rose quartz, amethyst, citrine, etc.). Illustrate **crystal shape** with cubic galena, hexagonal quartz, etc. Illustrate **cleavage** with calcite rhombohedrals and fluorite octahedrals. Illustrate **luster** with waxy jade, silky gypsum, and metallic pyrite. Illustrate **streak** with silver-gray specimens of hematite and galena: both have the same outward color, yet galena leaves a gray streak and hematite leaves a red one. Illustrate **fracture** with conchoidal obsidian, rough lepdiolite, and fibrous ulexite.

Fluorescent Minerals. Kids especially get a kick out of fluorescent mineral displays that illustrate unique properties of some minerals, whether the display be a small black-box affair or an entire tent filled with multiple displays.

1.3 Fossils

Fossils & Forms of Fossilization. Show what fossils are and how they form. For instance, you might have a modern clam shell next to different types of fossil clams: one in which the original shell material is intact, one in which the original shell material has been replaced by another mineral, another in which the shell has dissolved away, leaving just a mold of the fossil, etc. Show different types of fossils and fossilization (carbonized leaves or fish, petrified wood or bone, shark teeth that have been unaltered except for color, insects in amber, a fossil footprint or track, coprolites, etc.).

1.4 Earth Resources

Minerals in Everyday Life. Show one or two dozen rocks and minerals along with everyday products. Accompany it with an "Earth Resources Challenge" quiz for kids to match the products and the minerals that went into producing them. For instance, galena and a lead fishing weight, sulfur and a match, halite and salt, gypsum and plaster, copper and pennies or copper pipes, fluorite and toothpaste, hematite and iron or steal nails, etc.

How Many Minerals Does it Take to Screw in a Light Bulb? At least 15 different minerals and metals go into an ordinary incandescent light bulb. Make a display of these minerals surrounding a light bulb. The Mineral Information Institute has a nifty little poster and several fact sheets about this that you can download from their web site: http://www.mii.org

1.5 Lapidary Arts

The Many Forms of Lapidary Arts. Illustrate varied forms of lapidary arts (stone cutting, carving, and polishing) and jewelry making (silversmithing, wirewrapping, beading, etc.) with samples of materials crafted by members of your club, along with the tools used to craft them.

1.6 State Rockhound Symbols

The State Rock, Gem, Mineral, & Fossil. Create a display showing and telling kids about their state rock, mineral, gemstone, and fossil. Here in California, that list is: serpentine, gold, benitoite, and the saber-tooth cat *Smilodon.*

2. ACTIVITIES

While we discussed static displays above in Section 1, learning is always enhanced when it's interactive. Thus, we provide the following ideas to get kids doing, not just viewing. As with the displays, some of these activities will help scouts earn merit badges in earth science. To give kids even more incentive to have fun, you might reward those who complete activities with a free stone or fossil from the kids' booth or a free spin on a spinning wheel.

2.1 Rocks & Earth Processes

Igneous Earth Processes: Erupt-a-Volcano. To illustrate one type of igneous earth process, make a plaster model of a volcano that kids can blast off with baking soda and vinegar. You can illustrate a slow lava flow by filling the volcano with baking soda and pouring in vinegar that has been mixed with a couple drops of red food coloring and dishwashing liquid. You can illustrate a violent, explosive eruption with a small plastic film canister with a snap-on top. Put an Alka-Seltzer or a denture-cleanser tablet in the canister, then quickly add some vinegar, give it a good shake, pop it quickly into the top of the volcano, then stand back. Soon, the top of the canister will pop high in the air, much to kids' delight. You might follow this up this volcano activity with the next "Float-a-Rock" activity.

Float-a-Rock. Show kids pumice and obsidian. Note how both are volcanic glass, but pumice was turned into a "froth" by gas bubbles before it solidified. Then let kids see for themselves what happens when they drop them into a bowl of water. You might keep a supply of Apache tears obsidian and pieces of pumice to let them take home.

Sedimentary Earth Processes: Erosion. This activity can get a bit messy, so make sure you take adequate precautions for clean-up and for keeping surrounding areas dry. Have sand and soil

lining the bottom of a large plastic tub. Tilt the tub with a piece of 2X4 under one end. Let kids pour water from a sprinkling can at the top of the tub to see the process of erosion and how rain moves sediments down into basins.

Metamorphic Earth Processes: Clay One Plus Clay Two Equals Something New! To illustrate metamorphic processes, have stacks of clay in three thin layers: a red layer, a white layer, and a blue layer. Then let kids apply pressure from the sides and twist and turn the clay to see how the layers start to buckle and fold, like rocks being squeezed by earth processes. (If you add heat by baking, the constituency of your original "rocks" changes, too.)

"Name that Rock" Game. This could be supervised with a club member on hand to work with kids on getting the answers, or you can simply have numbered rocks spread out on a table or glued to a posterboard or a tri-fold posterboard (the kind with two fold-out wings used for science fair projects) with pencils and slips of paper for kids to work on the exercise themselves, matching rock specimens with names from a list (granite, marble, limestone, sandstone, etc.). Another way of doing this is to have really big rocks on a table. In front of each rock, tape a "What Is It?" card to the table. Encourage kids to touch and feel the rock specimen and guess what it might be before flipping up the card for the correct answer.

2.2 Minerals & Mineral Identification

Mineral Identification: Mohs Scale. Have 3 or 4 minerals from different parts of the Mohs scale for kids to scratch against one another to get an appreciation for mineral hardness. Recommended minerals to use are talc, calcite, feldspar, and quartz.

Mineral Identification: Streak. Have an uncoated white tile plate and 2 minerals of similar exterior color for kids to see how streak can differ. Suggested minerals: silver-gray galena with its gray streak and silver-gray hematite with its red streak.

Mineral Identification: Cleavage. Have a supply of minerals exhibiting different cleavage that kids can play with and tap with a hammer to see how they cleave. Suggested minerals: mica, calcite, fluorite, halite.

Mineral Identification: Chemical Reactivity. Show how you can test whether a rock contains calcite with specimens of limestone or marble. Have diluted acetic acid (vinegar) and eyedroppers and have kids see how the acid fizzes when dropped onto the rock. It works best if they scratch a little of the rock into powder first with a large nail.

Mineral Identification: Crystal Shape. Provide templates on cardstock for kids to cut out, fold, and tape together to make models of different crystal shapes.

"Name that Mineral" Game. This could be supervised with a club member on hand to work with kids on getting the answers, or you can simply have numbered minerals spread out on a table or glued to a posterboard or tri-fold posterboard with pencils and slips of paper for kids to work on the exercise themselves, matching mineral specimens with names from a list (quartz, garnet, gypsum, fluorite, etc.).

2.3 Fossils

"Make-a-Fossil." Kids can make fossil casts by pressing and removing shells, leaves, real fossils, or plastic models of fossils into clay and then pouring plaster into the resulting molds. To help ensure the clay and plaster separate easily and smoothly from one another, sprinkle a little talcum powder or brush a little vegetable oil on the clay before kids press in their shell or fossil to create their mold. Alert the kids and their parents that this activity will require coming back in a half hour or so after the plaster has dried.

"Paint-a-Fossil." The "Make-a-Fossil" activity described above requires a good bit of help and supervision for the kids and can get pretty messy; plus, it involves waiting time to allow plaster to dry, and some kids will prove impatient to see their results. If you don't have a lot of volunteers on hand in your kids' booth, you can make up a supply of plaster casts of leaves, trilobites, ammonites, shark teeth, etc., well ahead of your show. Then let kids paint the plaster casts with water-soluble tempura poster paints. This requires far less supervision—except for when a little boy decides to dump a whole cupful of poster paint across the table…

"Dig-a-Fossil." Kids can "excavate" a real fossil in a couple of ways. Using a large nail, they can chip out fossils, chicken bones, seashells, etc., that have been embedded in clay or plaster. (One recipe calls for mixing standard plaster of Paris with sand and diatomite; check the swimming pool supplies section at your hardware store for bags or boxes of diatomite, which is used in swimming pool filters.) Or, you can create small sand boxes with fossil casts affixed to the bottom for kids to "excavate" with paint brushes to brush aside sand.

"Fossil Rubbings." You can sometimes find tiles that have raised impressions of fish, dragonflies, and other critters on them. Use these for kids to make rubbings using paper and crayons, pencils, or charcoal.

Create a Geological Timeline. Geological timelines give a graphic appreciation for the depth of geologic time and the age of our earth. The Smithsonian has a web site that guides you interactively through the whole of geological time. This site is called "Geologic Time: The Story of a Changing Earth" and may be found at http://www.nmnh.si.edu/paleo/geotime. The site spotlights the geological events and their associated biological organisms throughout different eons, eras, periods, and epochs. It's packed full of info, including backgrounders on dating techniques scientists use, the geologic and fossil evidence they've pieced together to interpret past events and ecosystems, a glossary, and more. Geological timelines can take several forms: a.) The most common depiction takes the form of a vertical chart with dates and examples of events in the history of life, going from the oldest periods at the bottom to our current period at the top, along with images of some of the plants and animals that have graced our planet at the various periods. b.) Instead of a vertical chart, go with a horizontal timeline that kids can illustrate to show different plants and animals that supplanted one another through time, going from the older creatures (like trilobites) to the far left to more recent creatures (like woolly mammoths) at the far right. A long roll of large paper (available with gift wrapping supplies at variety stores or in the mailing and packing section of an office supply store) makes this a neat group activity. Roll the paper the entire length of a room and divide it up into the geological

time scale. Then pass out pencils, colorful markers and crayons, and assign different people to different time periods to make a long, illustrated mural depicting fossils and reconstructions of the plant and animal life of those periods. c.) Another neat activity for illustrating the vast scale of geologic time is to make a time line in chalk on a sidewalk. For your scale, have one inch equal one million years. Thus, to go from the beginning of the Cambrian Period to the present, your time line would stretch 544 inches, or more than 45 feet! (And that's ignoring the preceding four *billion* years of earth history. For that, you'll need a bigger piece of chalk!) Pass around pieces of colored chalk and have everyone draw pictures of appropriate fossils at different spots along the timeline, with trilobites in the Cambrian, dinosaurs in the Jurassic, woolly mammoths in the Pleistocene, and so forth.

"Name that Fossil" Game. This could be supervised with a club member on hand to work with kids on getting the answers, or you can simply have numbered fossils spread out on a table or glued to a posterboard or a tri-fold posterboard, along with pencils and slips of paper for kids to work on the exercise themselves, matching fossil specimens with names from a list (shark tooth, trilobite, horn coral, dinosaur bone, etc.). Or as with the "Name that Rock" game, have really big fossils on a table (a petrified wood stump, a shale slab with carbonized fern leaves, a large petrified whale vertebra, etc.). In front of each fossil, tape a "What Is It?" card to the table. Encourage kids to touch and feel specimens and guess what they might be before flipping up the cards for the correct answers.

"Name that Dinosaur" Game. You could approach this various ways. One is by having numbered pictures of a half dozen dinosaurs glued to a posterboard or tri-fold posterboard with slips of paper numbered 1 to 6, and simply have kids write the correct names. For a fun variation, paste the pictures on numbered cards. Then, not only can you have kids name the dinosaurs, they could also do things like sort them into two stacks, one with meat-eaters and the other with plant-eaters. Some common dinosaurs to consider including are the meat-eaters *Tyrannosaurus rex*, *Velociraptor*, and *Spinosaurus*, and the plant-eaters *Apatosaurus* (formerly known as *Brontosaurus*), *Stegosaurus*, and *Triceratops*. Still another option is to have plastic dinosaur models and large name tags printed on heavy card stock, with kids matching the right name tag to the right model.

2.4 Earth Resources

Making Paint. Have mortars and pestles for kids to grind different colored minerals (earthy red variety of hematite, white diatomite, yellow clay or limonite, black charcoal, blue azurite, green malachite, etc.). Then have them stir the different minerals in cups containing white glue diluted a bit with water to make paints. (Note: a couple minerals *not* to use would be yellow orpiment or red realgar or cinnabar; these contain toxic elements.)

Matching Game. Have one tray containing everyday items (an aluminum soda can, a lead fishing weight, a ring with a faceted stone, lava soap, copper pennies or piping, etc.) and another tray with rocks and minerals that went into making the everyday items (bauxite, galena, uncut quartz crystal, pumice, copper nugget, etc.), and have kids put the mineral next to the appropriate everyday item, or fill in a quiz sheet with correct pairings.

Earth Resources Scavenger Hunt. Have a tri-fold posterboard with everyday items glued to it, along with samples of minerals that went into them. You might have actual samples, or photos, of such items and minerals as: copper wire or pipe alongside a copper nugget; an iron or steal nail next to iron ore or hematite; a chunk of cement next to limestone and sand; a ceramic tile next to kaolin or clay; an aluminum can next to bauxite; a pencil next to graphite; a piece of plasterboard next to gypsum; brass screws next to a copper nugget and sphalerite crystal; etc. Then have kids go around the exhibit hall where you're holding your show with pencil and paper in hand to list items they find in the building that were created by earth resources.

2.5 Lapidary Arts

Make a Necklace or Bracelet. Have string and bowls of beads, tumbled stones topped with bell caps, etc., out for kids to pick their own pieces to assemble a necklace or bracelet, or provide pre-assembled packets of string, beads, and a bellcapped tumbled stone in 2X3 baggies that they can make at the show or at home.

Wirewrapping. Teach kids basic wirewrapping skills with copper wire and a simple project with fossils (shark teeth or ammonites) or tumble-polished stones.

Sculpting. Have soft soapstone and files on hand for kids to make their own small sculptures.

Cabbing. Have pre-cut pre-forms already on dop sticks for kids to shape and polish their own cabs on a Genie or Pixie or flatlap. Or have dopped cabs already shaped and ground and ready for just a final polish. I attended one show where the kids not only kept their polished cab but also received a "Lapidary Artist" certificate.

"Ugly Rocks" or "Cinderella Stones." Have a number of warty geodes and agates that have been sliced in half and polished and put the polished side down to illustrate to kids that with some rocks, "ugly" is just skin deep. When they turn over their ugly rocks, they'll be surprised to find the beauty inside: some with sparkly crystals and others with colorful shiny bands. Note how the lapidary arts of cutting and polishing help us uncover the hidden beauty in some rocks.

Rock Critters. Kids can make "rock critters" by gluing together flat or round stones, stacking them like snowmen to make animals and people, and attaching "google" eyes, pipe cleaner arms, legs or antennae, adding feathers, etc. (Note: this project requires "drying time" for the glue to set before kids take their critters off with them.)

Rock Painting. Using water-soluble tempura paints, kids can paint designs or pictures on flat, smooth rocks. Or transform entire round stones into ladybugs, turtles, fat cats, bunnies, etc., with water-soluble tempura paints.

Light Catchers. Kids can glue tumble-polished agates or beach glass onto translucent plastic container lids (like those from the tops of Pringles potato chip cans) and insert a wire or fishing line to hang the creation against a window pane. (Note: this project requires "drying time" for the glue to set.)

2.6 Other Activities

Display Competition. Get your club's kids involved a couple months before the show, helping each to assemble their own displays. Keep the rules and scoring simple (for instance, 25 points for accurate labeling, 25 points for variety, 25 points for quality, 25 points for showmanship, or for a neat, orderly, and interesting arrangement). Have ribbons, trophies, or mineral and fossil specimens as awards.

Spinning Wheel or Wheel-of-Fortune. This, of course, is a classic, seen at rock shows everywhere. Construct a casino-style spinning wheel with numbers where each spin yields a prize of a mineral specimen, crystal, polished slab, fossil, etc., laid out on a board with numbered squares. Or, if you don't have folks in your club who can construct a spinning wheel, a variation is to have kids draw a numbered ticket from a bowl or hat and match it to numbered specimens on a prize table.

Sand Sifting, or "Kidz Corner Mini-Mine." Kids use screens or colanders to sift out 6 prizes from a box filled with sand and salted with fossil shark teeth, small crystals, and tumble-polished pebbles to start their own rock collections. Kids especially like the shark teeth, quartz crystals, polished tiger-eye agate, or any tumble-polished pieces with bright color (purple amethyst, blue turquoise chips, red carnelian agates, etc.).

Pirate's Treasure Chest. This is another take on sand sifting. When you tumble a load of rocks, you end up with a handful of stones too small to include in a grab bag or to offer as a spinning wheel prize. Instead of tossing them, stockpile them until you have enough to fill a "pirate's treasure chest." Let kids sift through to pick out specimens to fill a 2X3 baggie. Or the chest might be filled with larger tumbled stones for them to pick out 2 or 3 pieces to keep. Look for your treasure chest at a second-hand shop; the more used and beaten in appearance, the better!

Touch Table. Have a table with large, sturdy rock samples illustrating interesting and unusual rocks and fossils for kids to touch and learn about, for instance, a large piece of pumice (perhaps next to a hematite specimen of the same size to dramatically illustrate the weight difference), a volcanic bomb, clam-bored rocks, large specimens of rough marble and granite next to specimens that have been polished smooth, etc.

Fishing for Rocks. Construct a booth with fishing poles where kids cast their lines over the booth, and rocks get attached for them to reel in.

"Kids Only" Silent Auction. If your club holds a silent auction for rocks, minerals, fossils, and lapidary slabs at your annual show, reserve one table just for kids, with bidding starting at kid-friendly levels, such as 25 cents, with nickel increments.

Slice a Geode. Have a supply of small geodes and/or thunder eggs to sell to kids for a buck or two, and go a step further in having a slab saw on hand with members signing up to cut the rocks for kids to see the surprises inside.

"Easter Egg" Rock Hunt, or a "Rock Pounce." Put minerals, tumbled stones, and fossils inside plastic eggs for an Easter egg hunt with rocky surprises inside. Hide the eggs around a room or in a yard or field. Or forget the eggs—simply hide colorful rocks, crystals, and fossils and set kids loose to find treasure in a "rock pounce."

The Exhibit "Scavenger Hunt." At most shows, kids simply race through the exhibits, rarely pausing to look at them at all unless some dramatic exhibit, like a fossil skull, catches their eyes. Get them to slow down, study, and learn by turning the exhibits into a "scavenger hunt." As kids enter the exhibit hall, hand them a quiz, with answers to be found among your displays. For instance, you might ask them to find and name a blue mineral, name the state rock, list 3 different forms of lapidary arts, describe their favorite display case, etc. Kids might then turn in their completed quiz for a free tumbled stone, a free spin on the spinning wheel, etc.

Gold Panning. Have stools or bales of hay for kids to sit on to pan for gold in big wash tubs that have been salted with gold concentrate, which is available via any number of web sites (just enter "gold panning concentrate" into a search engine). With the high price of gold, you should definitely consider charging a fee for this activity.

Black Sand Fun. Obtain a 5-gallon bucket of magnetic "black sand" (sand containing iron and magnetite) and dump it into a sand box along with magnets. Some kids can spend hours at such a sand box. The Carmel Valley club puts a piece of an old speaker, which has magnetic components, in the middle of the box.

Coloring Corner. Parents especially appreciate a free activity like this that can give their children something to do while the parents shop around at the dealers. Have blank paper and a supply of crayons, colored pencils, water-soluble markers, etc., for kids to make their own designs, or have a long roll of paper for a group of kids to make a mural. Or provide stencils or rock and mineral, fossil and dinosaur, and other coloring books and sheets for kids, along with a supply of crayons. You can get some sheets like these off the web. Coloring books can be purchased at bookstores and teacher supply stores. Another good source is Diamond Dan Publications, which sells some wonderful rock-related activity books at terrific prices. See the "Resources" section below for how to contact Diamond Dan Publications. In addition to providing materials for coloring, you might consider having earth science crossword puzzles, word searches, mazes for kids to draw a line from a cave opening to the mineral deposit inside, and similar games.

3. PRIZES FOR SELLING OR GIVING AWAY

To make sure you have an adequate supply of materials to serve as kids' prizes throughout your show, enlist all club members as early as possible. Ask that whenever they go on a field trip to fill bags with kid-sized specimens of whatever they're collecting, be it minerals, crystals, rocks, or fossils. Ask anyone who's handy with a sewing machine to whip up supplies of grab bags, and ask those who can't sew to come up with pre-cut pieces of cloth and string to assist those doing the sewing. And support your local electric company by having all club members tumble-polish stones throughout the year.

Tumble-Polished Stones. These are always loved by kids. Larger stones can serve as individual prizes, or you can prepare 1X2 or 2X3 baggies of smaller stones. The smallest stones might be used for the sand-sifting activity described above. The shinier and more colorful, the better. Don't high-grade the good stones out of the tumbler for yourself, with the kid's booth serving as a "dumping ground" for your plain stones or for those that didn't quite take a final polish. As a rule of thumb: if you don't like the stone, neither will kids!

Geodes, Crystals, and Minerals. Basically, anything colorful, shiny, and sparkly translates into a great kids' prize. If it catches the eye, it's a prize!

Fossils & Petrified Wood. Fossils can be delicate and fragile. For kids prizes, use ones that are relatively sturdy—crinoid stems, horn coral, or any silicified fossils—as well as petrified wood, especially colorful pieces like those from Arizona. Fossil shark teeth are also very popular but can be ground to dust if put into a grab bag without some sort of padded protection.

The Three Rock Types. Get kids started with a collection of the three rock types, which are easily and inexpensively obtainable from your local hardware or garden supply store. For igneous rocks, purchase a bag of cinders and package them in small baggies with a card providing info about cinder cone volcanoes. You can also get similar bags of limestone and marble and make cards about sedimentary and metamorphic processes. This goes along well

both with curricular requirements for elementary school kids learning about earth sciences and with requirements for Scouts earning earth science badges and belt loops.

Grab Bags. Selling grab bags is a time-honored tradition at rock shows. There are any number of "recipes." a.) Small cloth bags filled only with tumble-polished stones. If you do this, you need to make sure you have buy-in from a lot of club members who are going to take the time throughout the year to tumble an adequate supply. b.) Large cloth bags filled with an assortment of rough rocks, sturdy fossils, polished rocks, petrified wood, a crystal, an unpolished slab, etc. c.) "Educational Bags" with specimens in 1X2 or 2X3 baggies with labels on card stock; these might include a fossil, your state rock, a quartz crystal, an Apache tear, an igneous rock, a sedimentary rock, a metamorphic rock, etc. d.) "Hobo Sticks." Wrap up tumbled stones, fossils, and other rocks in cellophane or a plastic baggie, loosely wrap paper around them to add bulk, then wrap them in a colorful 11-inch square of fabric that can be tied to the end of a stick. Whatever type of bag you choose to create, to assemble them schedule a grab-bag-stuffing party with all the components in piles around a large table and have club members circle around to fill the bags. Some clubs help kids identify what's in their bags by having a board with labeled specimens glued to it so kids can open and spill out the contents of their bags and match their specimens to those on the board. I've also seen clubs devote one person to helping kids identify what's in the bag, and once they're finished, they give the child a free tumble-polished stone.

Stickers. Purchase rolls of the small, quarter-sized "Rockhound Stickers" from Frank Mullaney (rockyfiv@aol.com) to provide immediate rewards at different kids activity stations, or get dinosaur stickers from party supply stores.

Patches and badges and ribbons. The Santa Clara club of the California Federation has specifically crafted badges and patches that kids earn by participating in various activities. The West Seattle club of the Northwest Federation sponsors display competitions for kids and awards ribbons the second day of the show. If you gear some of your activities around the AFMS Future Rockhounds of America Badge Program, you can reward kids who belong to Federation-affiliated clubs with FRA badges.

Kids Corner Currency. One club in Indiana offers "Kids Corner Currency" (sort of like Monopoly money) to kids who take part in different activities, who help in running the Kids Booth, etc. The club makes advance arrangements with some of their dealers, who set aside rocks, fossils, and mineral specimens that kids can "purchase" with their Kids Corner Currency.

4. LECTURES & SPECIAL PROGRAMS

In addition to displays and activities and prizes, consider adding something special that will make your show stand out all that much more when it comes to transforming it into an educational experience for kids and teachers.

Video Loops. Set up a video corner with a TV monitor and chairs to continuously run videotapes or DVDs from popular series, such as National Geographic or the Nature Channel.

Speakers. Invite lecturers who are known to gear talks to a kid's level, particularly on such high-interest topics as dinosaurs, gold, and meteorites. In searching for appropriate speakers, start with members of your own club who have given interesting talks and programs over the years. Check the "Program Providers" list on the CFMS website. If you have a nearby college with a geology or earth science department, or a nearby natural history museum, you might glean suggestions from them, as well, and maybe from the local library.

"Kids' Viewing." Arrange a special time with your demonstrators and demo-dealers for a kids-only tour and viewing of different on-going lapidary arts at your show. Or arrange a specific time for all kids to get together to go through the displays with an adult who can point out highlights and answer questions.

Kids Day or School Daze or Junior Bazaar Day. Most clubs run 2-day shows over weekends. However, some clubs have extended to 3-day shows, with the opening day specifically geared to the local school districts and field trips. To make it worth their while, you should approach the school district long in advance with this idea and work with local science teachers to ensure that you'll have activities geared to the curriculum so teachers and kids are accomplishing real educational goals, not just enjoying a day playing hooky. Also, particularly during cash-strapped times, look for ways to help the district pay for transporting kids. One club in Springfield, Illinois, enlisted the aid of local businesses. They got a half dozen local businesses to kick in donations ranging from $500 to $5,000 each to cover the cost of buses and had a school day on Friday with 4,000 kids attending. A banner at the show listed the corporate underwriters at

different levels of donations (platinum, gold, silver, bronze), and these names were also listed on the show program that was passed out to all show attendees throughout the weekend.

Scouting Groups. Help Boy Scouts and Girl Scouts earn badges for the Earth Sciences. Work with local Scout councils to get requirements for different badges and to craft displays and activities tailored to those requirements and schedule visits by dens and troops with qualified members on hand to guide them through requirements for badges. Or if you don't have enough members on hand to provide guided tours and discussions, put numbers on all the displays and activities at your show that will help scouts earn badges, and have a numbered sheet to serve as a guide for the scout leader in taking his or her kids around the exhibit hall. The two most outstanding clubs within CFMS when it comes to aiding scouts with terrific resources, displays, and activities are the Santa Clara and Del Air societies.

Teachers' Corner. In addition to kids, think about what you might do for those who teach our kids. Provide rock, mineral, and fossil samples, posters, cut-out paper or cardboard crystal models illustrating different crystal shapes, backgrounder sheets on the state fossil, rock, mineral, and gemstone, and other educational materials free to certified teachers. At the Ventura club, we prepare bags containing materials like these and have them ready to hand quickly and efficiently to teachers at our Kids Booth. Donna and Larry Knapton of the Oxnard club have built up wonderful materials for teachers at their annual show.

5. RESOURCE SUGGESTIONS

Where can you get materials for your kids show activities? The first place to start is with your own club members and with any rock pile your club has to obtain rock, mineral, and fossil specimens, tumble-polished stone, and so forth. Beyond that, you can turn to rock shops, nature stores, museum gift shops, mail-order companies (Wards, Edmund Scientifics, etc.). Finally, the following are sources for activity suggestions, ready-made activity sheets, specimens, etc.

5.1 Future Rockhounds of America Badge Program

Sponsored by the American Federation of Mineralogical Societies, this program is free to clubs affiliated with the 7 regional federations within the AFMS. Kids earn badges in 15 areas (Rocks & Minerals, Earth Resources, Fossils, Lapidary Arts, Collecting, Showmanship, Communication, Field Trips, Leadership, Earth Processes, Earth in Space, Gold Panning & Prospecting, Gemstone Lore & Legend, Stone Age Tools & Art, and Rocking on the Computer). Kids earning a minimum of 6 badges earn a "Rockhound" badge as a mark of accomplishment and distinction and their names get posted to an "Honor Roll" on the AFMS web site. Those earning all 15 badges receive an enameled AFMS cloisonné pin. The manual contains 85 activities and may be accessed electronically at www.amfed.org/fra/fra_badge.htm. For further info, contact **Jim Brace-Thompson, AFMS Juniors Program Chair, 7319 Eisenhower Street, Ventura, CA 93003, (805) 659-3577,** jbraceth@roadrunner.com.

5.2 Diamond Dan Publications

Darryl Powell is creator of Diamond Dan Publications and author of a range of fun, educational materials for young mineralogists, from coloring and activity books to "Earth Digger Clubs" activities and patches, mineral note cards and placemats, and more. To see the complete range of materials, go to www.diamonddanpublications.net. For a two-year experimental period starting in 2010, CFMS clubs that indicate they have junior members in the CFMS Club Directory are being provided a free electronic subscription to Diamond Dan's "Mini Miner Monthly," the only periodical about minerals written specifically for young collectors. Throughout the year, it

brings kids articles about minerals, crystals, and mineral collecting, along with fun activities like crossword puzzles, word searches, cut-and-fold crystal models, and coloring pages. For further info on Diamond Dan resources, contact **Darryl Powell, Diamond Dan Publications, P.O. Box 143, Manchester, NY 14504, (585) 288-4936,** diamonddan@rochester.rr.com.

5.3 Regional Federation Manuals

The Eastern Federation of Mineralogical & Lapidary Societies publishes ***Working With Young People*, by Mabel Kingdon Gross.** It's an excellent guide to starting up a juniors' program from scratch, as well as a resource of activity tips. For pricing and to get a copy, contact **Suzie Milligan, EFMLS Supplies Chair, 931 Carmichael Road, Owego, NY 13827,** smilligan@stny.rr.com. In the 1970s, the Midwest Federation of Mineralogical & Geological Societies published the ***MWF Basic Guide for Junior Activities***. Michele Yamanaka and other members of the Midwest Federation have been working to update and improve upon this manual, and the new version is expected to be available in 2010 for around $8.50. To check on availability and pricing, contact **Dennis Westman, MWF Supplies, 15547 Bluebird Street NW, Andover, MN 55304, (763) 413-8767.** (I've seen 2 different street numbers for his address, so call first to confirm.) Within the California Federation, June Harris of the Santa Clara Valley Gem & Mineral Society has done an outstanding job authoring and assembling **resources to create educational stations** at their annual club show, with stations tied explicitly to Girl Scout and Boy Scout badge programs and to California earth science teaching standards. In recent years, as many as 2,000 scouts and school children have passed through those stations during a single show! For more information about these stations, contact **the Santa Clara Valley Gem & Mineral Society, P.O. Box 54, San Jose, CA 95103-0054**, info@scvgms.org.

5.4 Mineral Information Institute (Mii)

Mii is a 501(c)(3) nonprofit organization dedicated to educating youth about the science of minerals and other natural resources and their importance in our everyday lives. They help teachers by developing hands-on educational materials in a variety of earth science subjects at a variety of grade levels. They have wonderful teaching packets you can download for free (see, for instance, all the minerals that go into making a single light bulb), as well as posters, kits (such as "Pan for Gold"), and more. Much of it is free; some (such as the gold panning kit) is available at minimal cost. Check out the resources on their web site, www.mii.org. For further info, check the web site or contact them at **Mineral Information Institute, 8307 Shaffer Pkwy, Littleton, CO 80127, (303) 277-9190,** mii@mii.org.

5.5 Mineral of the Month Club

Richard and Cheryl Sittinger started this club in 1996 to offer choice specimens at low prices. Individual kids in your club can sign up to build a basic collection in a fun way that gives them something to look forward to each month; or you might do this as a club project to build a reference collection for all the kids to enjoy. Along with each mineral comes an 8-10 page write-up and a Club newsletter. Each new member receives a free copy of the DK Pocket Book *Rocks & Minerals*. Three levels of membership are available, the only difference being size and price of specimens. Pricing starts at $88 for a 1-year Silver-Level Membership (small, half- to 2-inch,

study-size minerals); a Trial Silver-Level Membership is $48 for 6 months. Any specimen may be returned for a refund. See details on their web site: www.mineralofthemonthclub.org.

5.6 U.S. Geological Survey

The USGS web site is a wonderful, if somewhat overwhelming, treasure trove of teaching resources that may be freely downloaded and used for educational purposes. So take advantage of what your tax dollars have bought you! They also have a page that will direct you to over 200 other web sites on all things geological (gemstones, fossils, agates and thunder eggs, minerals and mineralogy, meteorites, plate tectonics, earthquakes, state rocks, and more). To start, go to http://education.usgs.gov. For resources specific to California education standards, turn to http://education.usgs.gov/california.

5.7 Women in Mining (WIM)

Founded in 1972 as a nonprofit business league, WIM is composed of individuals employed in, associated with, or interested in the mining industry, including engineers, geologists, educators, and concerned citizens. Their goal is to educate both their members and the general public about mining industries while preserving and maintaining the history of mining and mining people. WIM participates in educating el-hi students about career opportunities in mining and the importance of mining in their everyday lives. WIM sponsors scholarships and essay contests and provides materials for class curriculum at all grade levels. Many of these materials are available, ready-made and linked to national education standards, on their web site. Check it out at: www.womeninmining.org.

5.8 Rocks in a Hard Place

This company is run by Mike and Chris Whittier, who are members of the Mother Lode Mineral Society. Mike and Chris have assembled rock and fossil kits ranging in pricing from as little as $5 to $30. At the low end of the price scale are an igneous set, metamorphic set, sedimentary set, rock-forming mineral set, mineral cleavage set, mineral streak set, and basic long- and short-wave mineral sets. At the upper end of the price scale are a variety of collections: 20 basic minerals, 21 basic rocks, 12 basic fossils, a hardness kit with 10 minerals, and fluorescent mineral kits with 10 specimens each. Most of the collections come with an ID booklet and 10x loupe. They also supply display stands, UV lamps, posters and rock charts, books, a Junior Rockhound Backpack filled with rockhounding essentials, and “Fun Stuff,” such as rock candy (jawbreakers, pebble jelly beans, chocorocks), soap rocks, and solar beads that turn colors under the sun. Check out their web site at http://www.rocksinahardplace.com. If you see something of interest, call (209)-524-1973 or email mcgotrx@rocksinahardplace.com.

5.9 Wards

Wards has been a long-time mainstay for science teachers in high schools and colleges across the land. In addition to their regular catalog, they have a big, 500-page Geology catalog chock full of all sorts of materials and supplies, from mineral and fossil collections to slides for storing

microfossils to posters and activities. Contact them at 1-800-962-2660 after checking out their web site, http://www.wardsci.com.

5.10 Edmund Scientific's

Although they can prove a bit pricey, Edmund Scientific's offers a variety of rock and mineral specimen kits, earth science collections, and fossil collections. Prices range from $14.95 to $69.95. They also sell crystal-growing kids, portable UV lamps, and tumblers. They've been around a good long time and are dependable and reliable. Their email address is http://www.scientificsonline.com, phone 1-800-728-6999.

6. TIPS ON RUNNING A KIDS BOOTH

A kids' booth can be one of the busiest, most hectic places during a gem show. Make sure you get adequate help and start early in your planning and in assembling the necessary materials. Here are some places to turn in seeking help, followed by a few tips for running a booth.

Club Volunteers & Parent Involvement. Running a kids booth can get hectic, and the more activities you offer, the more hectic it becomes, so you need to ensure a full staff from your club will commit to running the booth, with shifts to give folks breaks.

Kid Involvement. In addition to adults, involve kids within your club in running the booth, working alongside adults. However, make sure the kids who are called upon to help are mature enough to be a true help, not a hindrance. (Some clubs give specific activities to kids within the club to develop, oversee, and run during the show, with the kids then deciding how to use the proceeds they earn, whether it be to buy specimens from dealers toward the end of the show to distribute to all the kids in the club, to put money aside toward buying equipment for kids to use, such as rock tumblers, etc.)

Community Involvement. See about involving others from your community in helping at your kids' booth, for instance, scout leaders, teachers, students from local colleges (they can sometimes earn extra credit for introductory geology, oceanography, and other earth science courses), or middle school and high school students earning civics points. The Oxnard club has invited local librarians to be on hand at their own table to highlight local library resources for kids in the earth sciences, lapidary arts, etc.

Tips

1. Prepare as much as possible as far ahead as possible. Especially if you know from past experience you'll have a lot of kids coming through, you're going to run through a lot of kids' prizes. So plan well ahead and recruit help from fellow club members in sewing grab bags,

compiling specimens for kids' prizes and to fill grab bags, hosting a grab-bag-stuffing party, etc. And always plan for more rather than less. You can always use any leftovers next year, but that's better than running out mid-way through the show.

2. Consider "teacher vouchers" for grab bags. At our Ventura show this year, we ran out of grab bags very early in large part because of several teachers purchasing 20-30 at a shot for their classrooms. In order to guard against running out of bags for kids at the show, let teachers know you will be happy to fill "bulk orders" after the show is over. Give them a voucher, and get their phone numbers and addresses.

3. If running different activities, strive for pricing that is as uniform as possible to make it easy on everyone, with all prizes, say, 50 cents or a dollar.

4. Along the same lines as pricing, make any "rules" as easy and simple as possible. Volunteers should be able to jump in at a moment's notice and intuitively see how they can help.

5. Make sure a sign-up sheet is circulated and is completely filled. Don't let folks get by saying, "I'll wait until the show and sign-up as needed." Get firm commitments from the number of people you'll need in advance of the show. Don't leave fellow club members in the lurch when there's a line of 12 kids waiting at the spinning wheel!

6. Smile often—and have fun!