Lake George Gem and Mineral Club
Youth Program

2009 - 2010

YOUNG MEMBERS of the Lake George Gem and Mineral Club (LGGMc), generally under age 17, are invited to attend interesting workshops that teach about rocks, minerals, fossils, and related topics. These sessions run the **second Tuesday** of *every* month at the **Lake George Community Center**. The Juniors (age 12-17) and the Pebble Pups (age 7-11) meet at **6:00 p.m. to 6:45 p.m.** Parents are encouraged to attend.

Schedule

Meeting Month	Subject Area	Topics	Instructor
October	**The Dangerous Earth: Geologic Hazards**	Students will explore the geologic processes behind major natural hazards: earthquakes, volcanoes, landslides, mudslides, floods, and hurricanes. During class there will be an exciting exploration of how Earth processes influence our lives on a daily basis. Metamorphic rocks will be the study specimen for this month. **MB**	Veatch
November	**Ice Ages**	Colorado's Ice Age will be studied. We will look at animals of the Ice Age and the Clovis people who swept across Colorado and North America. Fluorite will be the study specimen for this month. **MB**	Veatch
December	**Common Ore Minerals: Where do Metals Come From?**	We will examine some major sources of metals, such as iron, copper, lead, and gold. We will then learn how to identify some common ore minerals and consider where they are found.	Carnein
January	**Minerals and How to Identify Them**	Most common minerals can be recognized by doing a few simple tests. We will focus on the tests that are most useful to the beginning collector, including hardness, cleavage, luster, and some special properties, such as magnetism, solubility, and sectility.	Carnein
February	**Building a Rock Collection**	Pebble Pups and juniors will learn to be a "collector" -- not just an accumulator and learn how to get serious with their collection, the importance of labels, sizes of collectable minerals, trimming specimens, cleaning minerals, and displaying minerals. The mineral for February study is amethyst. **MB**	Veatch

March	**How Do You Drill and Oil Well?**	Drilling an oil or gas well is a little more complicated than just digging a hole in the ground. We will study the machinery used and the steps involved in drilling a well and producing oil and gas.	Rakowski
April	**Field Methods for Collecting Rocks, Minerals, and Fossils**	We will study how to identify rocks, minerals, and fossils in the field and what equipment is needed. We will review the use of field equipment. Pyrite will be the study specimen April. **MB**	Veatch
May	**Fossils: Windows to the Past**	Fossils reveal prehistoric worlds and the plants and animals from these lost worlds. How to hunt for fossils and the proper way to collect them in the field will be demonstrated. A virtual field trip to the Florissant Fossil Beds National Monument. We will learn about the fossilization of giant redwood trees, insects, flowers, and leaves. A fossil will be the study specimen for this month. **MB**	Veatch
June	**Common Industrial Minerals**	We will study some minerals that are important for making things that are non-metallic, including minerals that are useful to the glass, ceramics, chemical, and oil and gas industries.	Carnein
July	**Nature's Hidden Rainbows: Fluorescence and Phosphorescence in Minerals**	Many minerals "glow" when exposed to ultraviolet light. We will look at examples of mineral luminescence, study why it occurs, and consider how it is used by the mining and oil industries.	Carnein
August	**What Crystals Tell Us**	Crystals are the key to understanding minerals' properties and how minerals are put together. We will study basic types of crystals, how crystals form, and what they tell us about the internal structure of minerals.	Carnein

Field Trips 2009-2010

Western Museum of Mining and Industry	**Red Rock Canyon Open Space**
Dreamtime mining claim	**Florissant Fossil Beds National Monument**

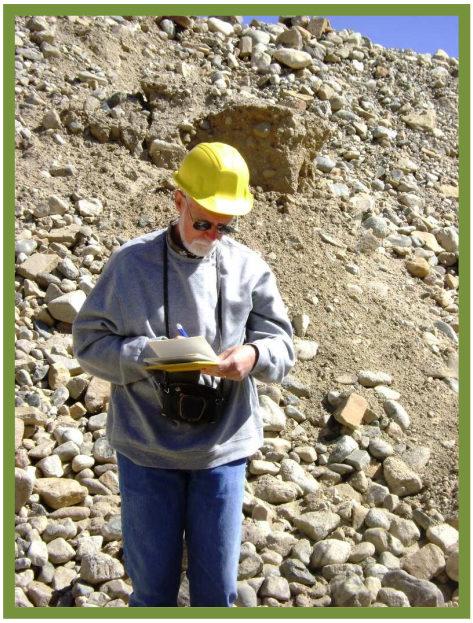
The LGGMC offers a total of 15 merit badges through the American Federation of Mineralogical Societies and several certificates of achievement for the Pebble Pup and Junior group. Each session where the merit badges are earned have "**MB**" in the topic discussion column. The merit badge program consists of a

Future Rockhounds of America Membership badge, 15 merit badges (Rocks & Minerals, Earth Resources, Fossils, Lapidary Arts, Collecting, Showmanship, Communication, Field Trips, Leadership, Earth Processes, Earth in Space, Gemstone Lore & Legend, Stone Age Tools & Art, Gold Panning & Prospecting, and Rocking on the Computer), and a "Rockhound Badge" for Pebble Pups who earn 6 of the 15 merit badges. There are 85 activities to choose from, or about a half dozen activities per badge, with Pebble Pups required to complete only 3 activities to earn any particular badge.

Pebble Pups and Juniors will work on individual rock, mineral, and fossil collections during each session for entry in the club's show in 2010. The group will also create related artwork and short articles for the newsletter. The scientific method will be covered, participation in science fairs is encouraged, laboratory methods will be demonstrated, and a variety of interesting topics will be covered. There will be at least 4 field trips scheduled during the year. The minimum age for the pebble pup program is 2rd grade. Pebble Pups and juniors must register with the youth program leader.

The youth programs meet the *second* Tuesday of each month. The Pebble Pups and Juniors meet from 6:00 to 6:45 pm.
Place: Lake George Community Center
Call Steven Veatch for more information at 719-748-5010

Biography of Junior and Pebble Pup instructors:

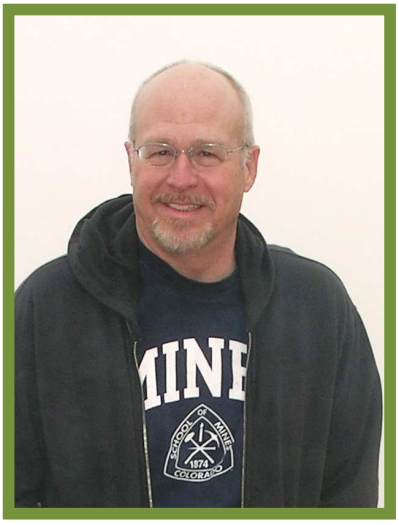


BOB CARNEIN has collected minerals since he was twelve years old, starting at sites in New England, New York, and New Jersey. His collection now numbers over 1500 catalogued specimens, specializing in fluorescent minerals, crystallography, and the minerals of Franklin, NJ, the Cripple Creek district, CO, and Chuquicamata, Chile. After receiving degrees in geology and glaciology at Ohio State, Bob taught undergraduate geology courses at Waynesburg College and Lock Haven University, in Pennsylvania. From 1972 through 1988, he taught students from all over the U.S. through Waynesburg's field-geology course, offered during the summer at a field station in Florissant. He recently retired and does volunteer work at the Florissant Fossil Beds National Monument and Arabian Acres Metropolitan District. He is the editor of the Lake George Gem & Mineral Club's monthly newsletter.

JOHN RAKOWSKI collected minerals and fossils since his early teens and read extensively about geology. John earned his degree in Geology and has worked as a Petroleum Geologist since 1968 exploring and developing oil and gas fields throughout the USA and several foreign countries. He has run his own geological consulting company since 1984. John continues an interest in geology as a hobby with mineral collecting and lapidary interests. John is a Certified Petroleum Geologist by the American Association of Petroleum Geologist, a Certified Earth Scientist and former Denver Chapter President and National Director of the Society of Professional Earth Scientists, a member of the Rocky Mountain Association of Geologists, member of Colorado Scientific Society, member of the Houston Geological Society, member of the New Orleans Geological Society, Board Member of the Pikes Peak Historical Society, President of the Lake George Gem & Mineral Club and Treasurer of the Indian Creek Property Owner's Association.

Junior and Pebble Pup Leaders

DANNY ALFREY (co-chair) has been a rock-hound since around age six, growing up in Southeastern Colorado. Danny has recently been conducting outreach programs through the LGGMC study group that connect people with the Earth sciences. Danny coordinates field trips for the LGGMC and serves as vice-president. Danny and his wife Jennifer Alfrey have resided in Woodland Park for over 15 years. They are active in the Ute Pass Kiwanis and both recently served on the Board of Directors. Their college-aged kids are Tiffany & Greg.



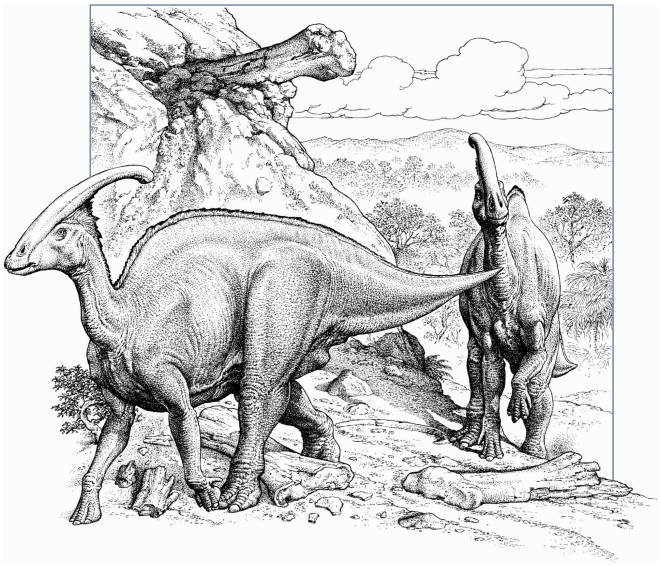
STEVEN VEATCH (co-chair) conducts educational geoscience programs and research throughout the Pikes Peak region. Steve is an adjunct professor of earth science at Emporia State University where he received an MS in earth science. Steve has coauthored 3 books: *Field Trips in the Southern Rocky Mountains, USA, Field Guide 5, The Paleontology of the Upper Eocene Florissant Formation, Colorado,* and *The World's Greatest Gold Camp: An Introduction to the History of the Cripple Creek & Victor Mining District.* Steve teaches graduate classes on geoscience courses for the Colorado School of Mines in the Special Programs and Continuing Education (SPACE) department.

Contact information:

Steven Veatch at 719-748-5010
Steven.Veatch@gmail.com

or

John Rakowski at 719-748-3861
rakGeologist@yahoo.com



LAKE GEORGE GEM & MINERAL CLUB

http://www.LGGMclub.org/