

The Lake George Gem and Mineral Club - Club News

October, 2016



Here are some notes from **John Rakowski** about our meeting at **10:00AM** on **Saturday, October 8:**

October 8 Meeting Starts at 10:00 AM

Our business meeting will be followed by a presentation by Donovan Sutters about cleaning and preparing mineral specimens. Our collecting season is almost over, and many members have questions about how to clean and prepare the specimens that they found this year. Donovan will give an informal but informative discussion about some of the effective techniques that he has found to clean local specimens. Donovan also moderates a Facebook site which addresses mineral cleaning methods. The group is the place to discuss experiences and ask questions about all aspects of mineral specimen preparation: cleaning, trimming, etc.

A **Silent Auction** will also be held at this meeting. Donate your extra specimens, books, or other Earth-science-related items to sell for the benefit of the Club! Bring some cash! There will be at least one **fluorescent specimen** and a copy of MacGinitie's *Fossil Plants of the Florissant Beds, Colorado*, valued at \$30.

Coming Events

✓ ✓ Several mineral, fossil, and geology clubs meet relatively nearby and encourage visitors. These include:

> **Cañon City Geology Club**, meets on the 2nd Monday of the month at 6PM in the United Methodist Church, Cañon City;

> **Colorado Springs Mineralogical Society**, meets on the 3rd Thursday of each month at 7PM in the Colorado Springs Senior Center, 1514 N. Hancock Ave., Colorado Springs;

> **Columbine Gem & Mineral Society**, meets on the 2nd Thursday of each month, 6:30PM in the meeting room, Mt. Shavano Manor, 525 W. 16th (at J St.), Salida;

> **Pueblo Rockhounds**, meets on the 3rd Thursday of each month at 6:30PM in the Westminster Presbyterian Church, 10 University Circle, Pueblo.

✓ ✓ **Pete Modreski** sent notices of the following upcoming events:

Oct. 3, "Interpreting the Western Interior Seaway in Canon City—the Bridge Creek Interpretive Site", by Dan Grenard, 7PM, Denver Museum of Nature and Science, Ricketson Auditorium.

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Oct. 8, “Ammonites and their Cousins—Predators of the Cretaceous”, by Dennis Gertenbach, 10AM, Canon City Library, 516 Macon St., C.S.

Oct. 12, 5:00-6:30 p.m., a short **geology & nature hike for Earth Science Week** on Green Mountain, Lakewood CO. Meet at 5 p.m. at the large Hayden Green Mountain Park trailhead parking lot off Rooney Road, 0.65 miles north of Alameda Parkway or 1.9 miles south of W. Colfax Ave. This will be an easy, short (1.5 mile round trip) hike on a good, mostly level trail, ending at about sunset (6:25 p.m. MDT); elevation gain will be only about 150 feet. The main goal of our hike will be some interesting triside outcrops of conglomerate composed entirely of lava pebbles within the Denver Formation, including a “window rock” you can look through. An optional, additional ¼ mile walk at the end will be more to look for wildlife than for rocks. Led by USGS geologist Pete Modreski. RSVP is not required, but if you’d like to, or have questions about weather or otherwise, contact pmodreski@usgs.gov or call [303-202-4766](tel:303-202-4766) (office), [720-205-2553](tel:720-205-2553) (cell). For more about Earth Science Week, Oct. 9-15, see <http://www.earthsciweek.org/> and <http://www.earthsciweek.org/upcoming-events> .

Oct. 20, “Climate Change, Parts I and II”, by William W. Little and Thom Fisher, Colorado Scientific Society, Shepherd of the Hills Presbyterian Church, 11500 20th Ave., Lakewood. Visitors welcome; www.coloscisoc.org.

Oct. 29-30, Book, Fossil and Mineral Sale at the **Colorado School of Mines Geology Museum**. 9 a.m. to 4 p.m. each day; 1310 Maple St., Golden, CO. A sale of material that is surplus or has been donated to the CSM museum.

Nov. 8, 3:00 p.m., Earth Sciences Colloquium at the Denver Museum of Nature & Science, **Exploring the Eocene Forests of Colorado**, by Steve Manchester, Florida Museum of Natural History. In the VIP Room. All are welcome, museum admission is not required.

Nov. 17, “Terrestrial Ecosystems During the Mesozoic” by Joe Sertich, Colorado Scientific Society, Shepherd of the Hills Presbyterian Church, 11500 20th Ave., Lakewood.

Nov. 18-20, Denver Area Mineral Dealers Show, Jefferson County Fairgrounds, Golden.

✓ ✓ **John Rakowski, John Sprouse, and Bob Carnein** set up a Club table at Mueller State Park’s fall outdoor event, Sept. 24. It was a cold, windy day, but several hundred people showed up to see the aspen and talk with us and other participants.

✓ ✓ **Krystle Dorris** is reportedly recovering from a mountain-bike accident in which she broke several ribs. **Joe Dorris** reports that she won’t require surgery but will be “out of commission” for 8 weeks. We wish Krystle a complete and uncomplicated recovery!

✓ ✓ Thanks to **Ingrid Hamilton**, who sent a few more photos from the 2016 LGGMC Gem & Mineral Show:





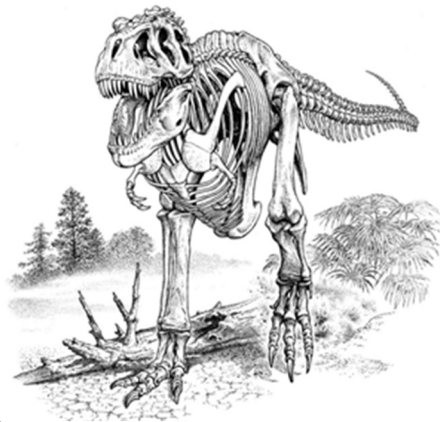
✓ ✓ **Steven Veatch** sent the following field-trip schedule for **Pikes Peak Pebble Pups**:

Nov. 12-13: 37th Annual New Mexico Mineral Symposium (presentation by **Ben Elick and Jenna Salvat** on the Mineral Curation Project at the Cripple Creek District Museum).

Steve also sent this notice of an upcoming class:

VEATCH TO TEACH CLASS ON PALEONTOLOGY OF THE PIKES PEAK REGION

Paleontology has played a central role in understanding the history of the Earth. Exciting new analytical methods and fossil discoveries shed new light on the history of life, impact events, climate change, extinction events, and the evolution of the planet. These topics will be examined through advances in paleontology that have been made in the Pikes Peak Region of Colorado. Veatch, a long-time member of the club, will teach this class Oct 15, Sat 9:30 am-12:00pm. The class title is "Paleontology of the Pikes Peak Region." This class will be held at the Rocky Mountain Dinosaur Resource Center in Woodland Park, Colorado. Everyone gets a certificate of completion, a fossil specimen and a resource CD to take home. The fee is \$20.00 plus museum admission. Please bring a pen, notebook and clip board. Pre-registration is required. Call Deb at 719-686-



1820 x104 to register for the class.

Steve also sent this short article about the Pebble Pups at the Denver Gem & Mineral Show:

PIKES PEAK PEBBLE PUPS SPEAK AT THE DENVER GEM AND MINERAL SHOW by **Steven Wade Veatch**

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The Pikes Peak Pebble Pups took the stage once again at the Denver Gem and Mineral Show, where five Pebble Pups presented their research before an eager audience. The Pups provided an exciting lineup of topics. Jenna Salvat's lecture title was "The Mineral Significance of Cripple Creek & Victor Mining District." Jack Shimon's paper was "The Rudist Fossil Story." Jerrod and Nathan Gallup spoke about "The Geology of Mammoth Caves." Destin Bogart, a distance learning Pebble Pup, presented an overview of the *Dimorphodon*.



Jerrod and Nathan Gallup pose with Steven Veatch (Jeff Gallop photo).

This is the fourth year that the Pebble Pups have presented their research at the show. They have earned a permanent speaking slot for future shows. The Pikes Peak Pebble Pups is a joint youth program between the Colorado Springs Mineralogical Society and the Lake George Gem and Mineral Club.

✓ ✓ Can we travel forward or backward in time? **Paul Combs** sent a very interesting link to a site with information about a new book that may answer this question:

Why does time advance? New theory links flow of time with Big Bang

From [Amazing SPACE!](#), a Flipboard magazine by [MGHart](#)

A simple question from his wife – Does physics really allow people to travel back in time? – propelled physicist Richard Muller on a...

[Read it on Flipboard](#)

✓ ✓ **John Rakowski** sent this notice about the upcoming auction at Pikes Peak Historical Society:

The Pikes Peak Historical Society will have its Annual Auction on Saturday October 15. Pulled pork sandwiches or chicken salad will be available for purchase starting at Noon when the Auction Preview opens. Below is a photo of the carving of an eagle on the reverse side of a 275-carat light tan topaz from the Tribute Pocket of the Agnus Dei Claim donated by Jean Cowman and Rich Fretterd. The other side has the conventional crystal faces of the topaz. There is a RESERVE PRICE of \$1400 on the piece, it is worth considerably more.

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Another offering is an amethyst crystal found by Rich Fretterd at his claim near Cripple Creek and donated by the present owner Donovan Sutters. The value on this piece is about \$150 as amethyst of this size is very unusual from Cripple Creek. There may be other gem and mineral items added to the auction later.



✓ ✓ Club hats are available for \$10. Contact **Bobby Korzekwa** or **John Rakowski** to reserve yours.

✓ ✓ ✓ ✓ **Membership in the Lake George Gem and Mineral Club is closed for 2016. If you haven't renewed, your next chance to reconnect will be next January.** You are welcome to attend regular Club meetings, but field trips are open only to current members.

✓ ✓ And here is the latest installment of "Bench Tips" by Brad Smith (www.BradSmithJewelry.com):

REMOVING SOLDER FROM A BEZEL

Sometimes when you solder a bezel to a base plate, you end up with excess solder that needs to be removed before setting the stone. My choice of tool for this is called an "Inverse Cone" burr used in a rotary tool or flexshaft. It cuts on both the bottom and the side and is shaped so that there's less chance of cutting into the bezel wall than if you used the more common cylinder burr shape. I find the 2-mm size useful for almost any bezel.



TESTING FOR SILVER

Often you need to identify some of those unknown "silvery" pieces in the bottom of the toolbox or some piece of old jewelry. Is it silver or something else? Of course, if you need to know exactly what you have, it's best to send your metals off for refining. But inexpensive silver testing solutions can be used to help distinguish higher silver-content alloys from alloys that have the same appearance but with little to no silver content, like German silver or nickel.

I purchased a half-ounce bottle of JSP Silver Testing Solution #GT41. It's not a rigorous analytic test, but it lets you know if you're on the right track. And it's inexpensive. Mine was only \$3. With a fresh solution, you have an instant reaction after applying it to the metal being tested. The procedure is simple - as you apply a small drop, look for a color change. Note that the acid will leave a slight mark, so choose a spot that is out of the way or will be easy to polish.

If you suspect the object is silver plated, you should file a little notch somewhere inconspicuous to expose what metal is below the surface. Otherwise, all you test will be the surface plating.

Here's the reaction I got when testing various materials:

Fine silver	Red/Orange
Sterling silver	Brick Red
80% silver 20% copper	Dark red changing to gray
Brass	Yellow changing to blue
Nickel	Gray-green
Copper	Yellow changing to blue
Steel	Black
Stainless Steel	No color change

Caution - If you do any of this testing, know that you are handling a reasonably strong acid. The GT41 label says it includes nitric acid and potassium dichromate.

Wear safety glasses.

Do not get any testing solution on your skin.

Use a solution of baking soda and water to neutralize acid.

Wash and clean up well when you're done.

"Bench Tips for Jewelry Making" and "Broom Casting for Creative Jewelry" are available on Amazon

Notes from the Editor

Bob Carnein, Editor

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You may have noticed that the Cañon City Club has an upcoming (Oct. 8) program about ammonites and their kin. If you don't know what an ammonite is, and if you've visited or plan to visit Baculite Mesa, here's an article to pique your interest.

OK, So What's a Baculite? ***by Bob Carnein***

Baculite Mesa is a favorite fossil collecting locality near Pueblo, Colorado. Although I haven't collected there yet, I've talked with several people who have, and I've noticed some confusion about the main group of fossils for which the locality is famous. Like most things in science, a lot of this has to do with confusing terminology. This is an introduction to the fossil group of *cephalopods* (sef-uh-lo-pods) known as *baculites*.

The cephalopods are a diverse class in the Phylum Mollusca that includes the modern squids and octopi. Most living cephalopods either have no shells or have, at best, a small, internal, vestigial shell. However, one group, the Nautiloidea, includes an animal with a beautifully coiled shell with internal partitions—the chambered or pearly nautilus (Figures 1, 2). Confined to the southwest Pacific, the genus *Nautilus* is the only modern remnant of a huge, diverse group of shelled cephalopods that were important in ocean ecosystems for most of the last 500 million years.



Fig. 1. Living *Nautilus*. (en.wikipedia.org)



Fig. 2. Section of chambered *Nautilus* Shell. (www.pinterest.com)

Nautilus has a coiled shell that is subdivided into a series of internal chambers (or *camerae*) by partitions called *septa* (Figures 2, 3). Each septum was, at one time, the rear wall of the *living chamber* in which the squid-like animal resided. As the *Nautilus* outgrows one living chamber, it moves forward and builds a new one, sealing off the last one with a septum.

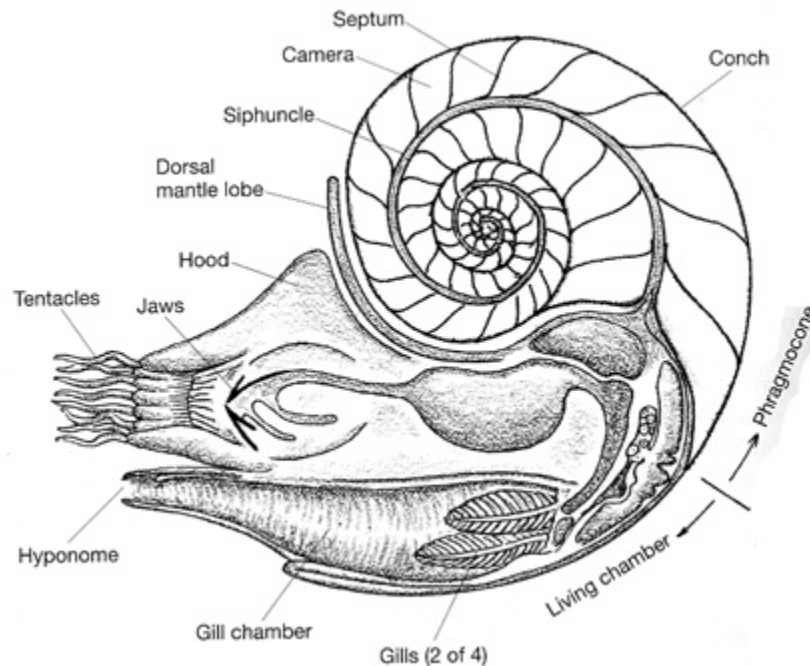


Figure 3. Anatomy and shell parts of *Nautilus*. (www.geosci.usyd.edu.au)

The abandoned chambers form a coiled shell (*phragmocone*) that, in life, is located behind and above the animal's body (Figure 3). These chambers are connected to each other, and to the living chamber, by a tube (called a *siphuncle*). The *Nautilus* can fill the chambers with gases, giving the shell buoyancy and allowing the animal to move upward (or, by flooding the chambers, downward) in the water column. The septa add strength to the fragile, partly gas filled shell, much like the bulkheads in a submarine prevent it from being crushed at depth.

Where the septa join the interior of the *Nautilus* shell, they form a line, called a *suture*. The sutures are inside of the shell—they can't be seen from the outside. However, if the *Nautilus* shell is cut open, one can see the sutures as curved lines wrapping around the inside of the shell. In fossil nautiloid cephalopods, the internal chambers have usually been filled with mud or other mineral matter. The shell itself was made up of the mineral *aragonite*, a form of calcium carbonate (CaCO_3). Aragonite is relatively unstable, and, as a result, the outer shells of nautiloids often dissolve after burial. But the pattern formed where the septae joined the now missing outer shell is preserved (Figure 4). This is called a *suture pattern*.



Figure 4. Nautiloid cephalopod with shell removed, showing suture pattern. (www.woostergeologists.scotblogs.wooster.edu)

It's ironic that the only living cephalopods with an external shell are also the most primitive group in the fossil record. Nautiloid cephalopods appeared in the Cambrian Period, nearly 500 million years ago. At that time, many nautiloids had straight, cigar shaped shells, rather than coiled shells like the modern *Nautilus*. Some of these were more than 13 feet long (Figure 5). What makes them nautiloids is that the sutures are simple, broadly curved lines (Figure 4, 6, 7).

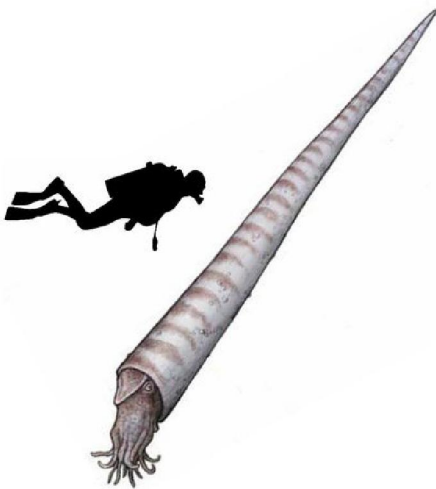


Figure 5. Straight Paleozoic nautiloid, with diver for scale. (www.pinterest.com)

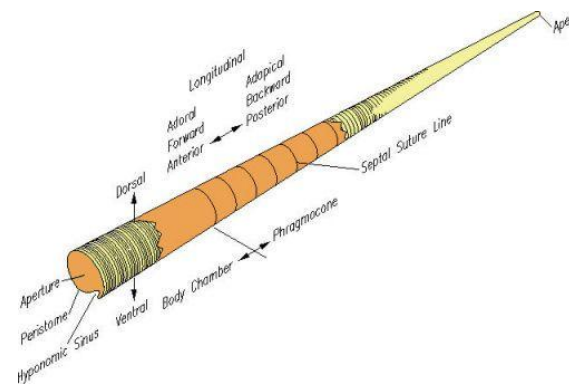


Figure 6. Shell parts. (www.tonmo.com)

By analogy with present-day *Nautilus*, the ancient nautiloids are believed to have been active ocean swimmers and predators. Those with straight shells often secreted minerals in the otherwise empty chambers. This is thought to have balanced the shell so that the animal didn't live with its head pointed downward. Although the soft parts aren't preserved, they probably had grasping tentacles and large, simple eyes adapted to dim light (like the modern squids). They most likely swam by use of a pointable tube (*hyponome*, Figure 3) through which they could squirt a jet of water. When they first appeared, they had very few competitors—fish had not yet evolved, and trilobites, which were the other major group of mobile marine predators, probably spent most of their time on the sea floor. The early nautiloids probably had relatively heavy shells and may have been slow swimmers. They may have preyed on trilobites, which most likely didn't move very quickly.

Eventually, as fish and other mobile prey appeared, the shelled cephalopods evolved lighter, more streamlined shells. This made them more agile predators, as well as helping them to escape from other predators. However, lighter shells were more subject to crushing in deep water. As a result, some varieties slowly evolved more elaborate, corrugated septa. Most of the corrugations are concentrated where the septum joins the inside of the shell—the most vulnerable part of the structure. As a result, when the shell is removed, we see a suture line that is more crenulated than that of the typical nautiloid. The new group, which appeared in the Devonian Period, is the *ammonoid cephalopods*. Several genera have been suggested as “connecting links” between the nautiloids and the ammonoids.

Paleontologists distinguish ammonoid cephalopods mainly by their suture patterns. Most are coiled, though a few have straight shells, including the genus *Baculites*. Three main types of suture pattern are recognized among the ammonoids: goniatitic; ceratitic; and ammonite sutures (Figure 7), in order of increasing crenulation and complexity. In the fossil record, goniatites appear in the Devonian and are the commonest ammonoids of the Paleozoic Era. Ceratites appeared in the Mississippian and ammonites in the Permian, coming to dominate in the Mesozoic Era, as goniatites and ceratites gradually disappear. After a period of rapid diversification and elaboration, all ammonoid cephalopods disappeared by the end of the Cretaceous.

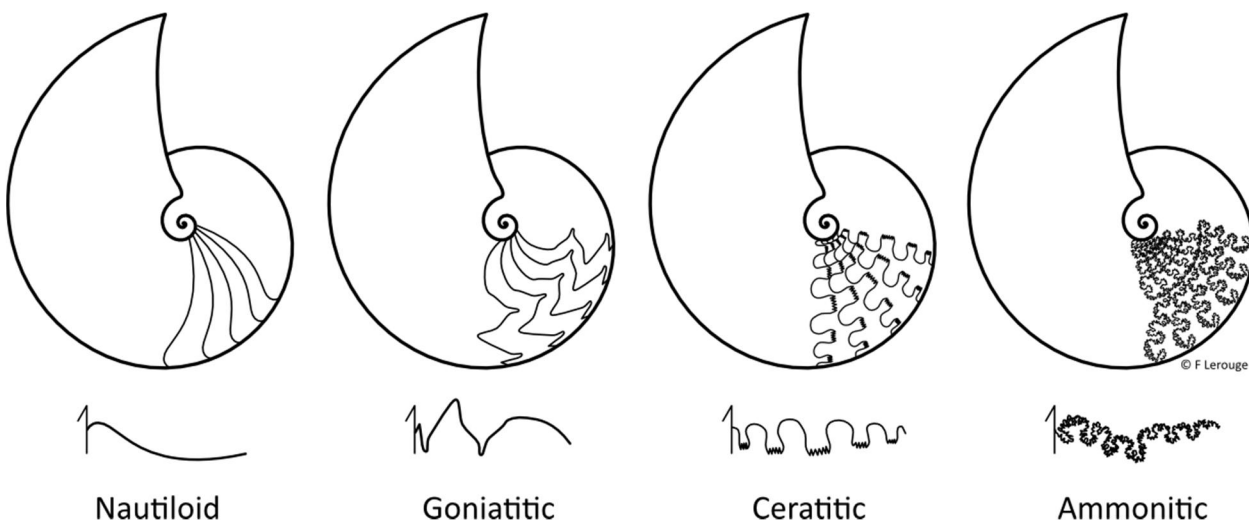


Figure 7. Suture patterns for Nautiloid and Ammonoid cephalopods. (www.english.fossil.net)

Baculite Mesa is an exposure of the Cretaceous Pierre Shale, deposited between 69 and 80 million years ago in a huge expanse of sea water known as the Western Interior Seaway. This shallow sea covered most of the midwest, including a large part of Colorado. Marine animals occur in concretions or “free floating” in the shale itself. The most common are several species of the genus *Baculites*, a straight-shelled ammonoid cephalopod with ammonitic sutures (Figure 8). Although the thin outer shells are sometimes preserved (in which case you can’t see the suture pattern), many of the fossils exhibit elaborate ammonitic sutures. Coiled ammonoids also occur here, along with bivalves (“clams”), gastropods (“snails”), trace fossils, and, rarely,



Figure 8. Baculites, one with shell intact and others with shell removed (showing ammonite sutures). (www.falloftheohio.org)

echinoderms (“sand dollars”). If you go there, imagine a sparkling, shallow sea teeming with jet propelled, cigar-shaped squids with iridescent shells—what an incredible sight that would have been to see!

Please note: Baculite Mesa is private property and must not be entered without permission of the land owner. The easiest access is provided by a trip organized by one of the local rock and mineral clubs. The owner has been very nice about letting groups in, and his rights must be respected to assure future access.

2017 Membership Application, Lake George Gem & Mineral Club

Box 171, Lake George, Colorado 80827

www.LGGMClub.org

Date: _____/_____/20____

Name(s) _____

Address _____ City _____ State _____ Zip _____

Telephone () _____ - _____ Email (please print) _____
(required to receive newsletter and field-trip info)

Names/ages of family members (if family membership) _____

Dues for Jan 1 through Dec. 31 each year are as follows (please check membership type):

___ Individual (18 and over).....\$15.00

___ Family (includes dependents under age 18).....\$25.00

Dues are due on or before March 31. Members with unpaid dues will be dropped from the roster on April 1.

I agree to abide by the Club constitution, by-laws, and rules regarding field trips and club claim visits.

Signed _____ Date: _____/_____/20____

I am or have previously been a member of Lake George Gem & Mineral Club. Yes ___ No ___

My interest areas include (check all that apply): Minerals ___; Fossils ___; Lapidary ___;
Micromounts ___; Colorado geology ___; Pebble Pups (ages 7-17) ___; Mining History ___;
Crystallography ___; Other _____

I am willing to give a talk/presentation to (the Club) or (Pebble Pups) on _____

_____ and/or lead a field trip to (list) _____

I am willing to participate/help in the following ways (can choose more than one): Club Officer ___;
Newsletter Editor/Writer ___; Local Show/Show committee ___; Nominating Committee ___;
Winter Programs Committee ___; Field Trips ___; Art (badges) ___; Membership Coordinator ___;
Website Assistance ___; Pebble Pups ___; Other (be specific) _____

Questions about the Club or Activities? Visit the website or contact a Club officer.

Updated 05/01/2015

Lake George Gem & Mineral Club
PO Bo 171
Lake George, CO 80827



The Lake George Gem and Mineral Club is a group of people interested in rocks and minerals, fossils, geography and history of the Pikes Peak/South Park area, Indian artifacts, and the great outdoors. The Club's informational programs and field trips provide opportunities to learn about Earth science, rocks and minerals, lapidary work and jewelry making, and to share information and experiences with other members. Guests are welcome to attend, to see what we are about!

The Club is geared primarily to amateur collectors and artisans, with programs of interest both to beginners and serious amateurs. The Club meets on the second Saturday of each month at the Lake George Community Center, located on the north side of US Highway 24 on the east edge of town, sharing a building with the county highway shops. **In the winter, we meet at 10:00AM. From April through October, we meet at 9:00AM, to allow more time for our field trips.**

Our organization is incorporated under Colorado law as a nonprofit educational organization, and is a member of the Colorado, Rocky Mountain, and American Federations of Mineralogical Societies. We also sponsor an annual Gem and Mineral Show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems, or jewelry. Annual membership dues (Jan. 1 through Dec. 31) are \$15.00 for an individual (18 and over), and \$25.00 for a family (parents plus dependents under age 18).

Our Officers for 2016 are:

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