

Pebble Pups Program 2016-2017



Pebble Pups meet the **third Wednesday** of each month during the academic school year (September through May). Time: **6:00 p.m. to 6:45 p.m.**
Place: **Lake George Community Center**

| Month | Class Title | Topics | Instructor |
|--------------|---|---|--|
| September 21 | Class: Fossils | Journey back in time and learn about dinosaurs, mammoths, and other extinct creatures preserved in the fossil record. | Steven Veatch |
| October 19 | Class: Minerals | In this class we will learn about minerals and how to identify them. | Steven Veatch |
| November 16 | Class: Rocks and Minerals | In this class we will look at rocks and minerals the Pebble Pups bring in. | Steven Veatch John Rakowski Betty Merchant |
| December 21 | Writing About Your Rocks, Minerals, and Fossils | Pebble Pups will learn how to write short research papers, science poetry, and imaging specimens. | Steven Veatch Betty Merchant |
| January | Field Trip TBD Denver Museum of Nature and Science | Meet Dr. Ian Miller at the Denver Museum of Nature and Science and go behind the scenes and view the latest discoveries in paleontology . There will also be a trip to the paleontology and the mineral hall. Arrival time 9:15 am. Return early | Steven Veatch Betty Merchant |
| January 7 | Family Geology Day (Jan 7) 2017 at WMMI) | The Pebble Pups and Earth Science Scholars will man three activity tables and present what they do to families of the Pikes Peak Region | Steven Veatch Betty Merchant |
| January 18 | Class: Uses of Rocks and Minerals | Roger will talk about how we use rocks and minerals every day in our lives. | Roger Pittman |
| February 15 | Class: A Geological Odyssey | This class will explore various topics. | John Rakowski |
| March 15 | Class: Field collecting | We will learn how to hunt for and collect rocks, minerals, and fossils in the ground. | Steven Veatch John Rakowski |

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| April 19 | Class: Building a Collection for Home and for the Gem Show | We will learn about curating your collection and improving both the scientific and economic value of your collection. | Steven Veatch Betty Merchant |
| April | National Poetry Month | Look for celebrations and fun events | |
| May 17 | Writing About Your Rocks, Minerals, and Fossils | Pebble Pups will learn how to write short research papers, science poetry, and imaging specimens. | Steven Veatch |

Schedule subject to change

The **Future Rock Hounds of America Program**, sponsored by the American Federation of Mineralogical Societies, is an important part of the Lake George Gem and Mineral Club Pebble Pup program. All pebble pups are urged to participate in the program and earn merit badges. Instructions for earning each merit badge are on the following blog: <http://pebblepups.blogspot.com>

| Earth Science Literacy Big Ideas | |
|----------------------------------|---|
| 1 | Earth scientists use repeatable observations and testable ideas to understand and explain our planet. |
| 2 | Earth is 4.6 billion years old. |
| 3 | Earth is a complex system of interacting rock, water, air, and life. |
| 4 | Earth is continuously changing. |
| 5 | Earth is the water planet. |
| 6 | Life evolves on a dynamic Earth and continuously modifies Earth. |
| 7 | Humans depend on Earth for resources. |
| 8 | Natural hazards pose risks to humans. |
| 9 | Humans significantly alter the Earth. |

The pebble pup program provides students with an overview of the origin and evolution of the Earth. Informed by the recently released Next Generation Science Standards, this program examines geological time scales, radiometric dating, and how scientists “read the rocks.” Students explore dramatic changes in the Earth over the last 4 billion years, including how life on Earth has changed. In addition to looking at geology on a global scale, students will take to their own backyards to explore and share their local geologic history. Students will bring their understanding of the dynamic Earth, along with materials presented, discussion questions, and assignments into their own powerful understanding.

Pebble pups that have an interest in a deeper dive in earth science projects are urged to work with Steven Veatch, who can supply individual projects to pebble pups where they will learn basic research, science writing, and experience the excitement of having their research published. Several of the pebble pups have published some of their work on the pebble pup blog.

BIOGRAPHY OF PEBBLE PUP INSTRUCTORS:

STEVEN VEATCH lives on acreage near the Florissant Fossil Beds National Monument and grew up in the Pikes Peak region. He 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 studied oceanography and meteorology while serving in the U.S. Navy. Steve teaches graduate classes on geoscience courses for the Colorado School of Mines in the Special Programs and Continuing Education (SPACE) department. Steve has contributed chapters to 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 has also written numerous articles, essays, reviews, and monographs on climate change, paleoecology, dinosaurs, trace fossils, mammoths, and the Ice Age (Quaternary). His poems, science articles, and nonfiction work appears in newspapers and magazines. He is a coeditor of *Leonardo*, a literary journal of the Central New Mexico Community College. Each year he attends the Interlochen College of Creative Arts in northern Michigan where he joins a writer's retreat. Steven writes a popular blog called Colorado Earth Science. He is active in the Kansas Academy of Science, the Colorado Scientific Society, and the National Earth Science Teachers Association, and the Geological Society of America.

BETTY MERCHANT has been helping with Pebble Pup and Earth Science Scholar outreach projects for several years. This academic year she will also join us as an instructor. Betty has a BA in English, MED in Guidance and Counseling, and a BS in Geology. She is a retired high school science teacher. Betty taught physical science, Earth science, and physics. Betty also served as the science department chairman, served on many curriculum committees, and designed and produced elementary science shows for second graders. Betty was a member of the National Science Teachers Association, National Education Association, and the Aurora Teachers Association. She is presently a member of the Ute Pass Historical Society, Friends of the Fossil Beds, Western Mining Museum, and the Colorado Springs Mineralogical Society.

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 active in the Indian Creek Property Owner's Association (was treasurer for 11 years).

PEBBLE PUP ADVISORS:

Alister Cruickshanks is the editor of *Deposits* (United Kingdom). *Deposits* is a full color, glossy, 52-page high quality earth science, geology, and paleontology magazine. The magazine has gained a strong reputation worldwide for its superb quality of articles in topical areas. Alister is also a Director of UKGE Ltd (Leading Geological and Earth Science Supplier) Southwold, Suffolk, United Kingdom.

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 1,500 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.

Betty Cain is the former editor of the CSMS newsletter Pick N Pack. She continues to support our hobby in local, state, and national rockhound organizations.

Bill Cain has been collecting Earth materials since who flung the chunk. He served in the United States Navy and is now enjoying retirement and helping advise the Pebble Pups.

Contact information: Steven Veatch at 719-748-5010 or steven.veatch@gmail.com

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