



# THE MOUNTAIN GEM

## Gem & Mineral Society of Franklin, North Carolina

### May 2019 Newsletter



#### Franklin Gem and Mineral Society

##### Club Officers and Board of Directors

President: Jane Morgan, (828-342-8703)  
Past President: Al Pribble, (828-342-3119)  
Vice President: Arlon Eldridge, (828-369-5271)  
Secretary: Susan Fritz, (828-524-4936)  
Treasurer: Lake Holland, (828-369-5421)  
Assistant Treasurer: Kathi Walbridge, (828-349-9615)  
Museum Manager: Duane Haskell, (828-349-5123)  
Director (2018): Mike Gillen, (678-772-6375)  
Director (2018): Tom Parker, (828-342-3619)  
Director (2019): Diane Mason, (706-379-1718)  
Director (2019): Tom Sterrett, (828-349-3774)

##### Committees

Membership: Tom Parker and Diane Mason  
Museum Curator: Sean Price, (336-964-2061)/Larry Ellert, (828-349-0774)  
Curator Emeritus: Fred Plesner, (828-349-4224)  
Museum Gift Shop: Anamay Rossomando (828-349-2807), Vicki Knisley (828-371-4954), & Diane Mason  
Museum Workshop: Cy Amrich, (828-356-7816)  
Publicity: George Fritz, (828-524-4936)  
Field Trip Coordinator: Marsha Harmon, (828 369-7262)  
Program Coordinator: Kathi Walbridge  
Calendar: Jay Mooney, (678-488-0620)  
Gemboree: Kathy Green, (941-387-4397)  
Education/Tours: Marsha Harmon, (828 369-7262)

##### Club Newsletter

Editor: Stacy Walbridge [[fgmseditor@gmail.com](mailto:fgmseditor@gmail.com)]

Club Contact E-mail: [franklingemsociety@gmail.com](mailto:franklingemsociety@gmail.com)

##### Club Website

<http://www.fgmm.org/>

##### Club Facebook Page

<https://www.facebook.com/franklingems>

##### Monthly meetings

**The Franklin Gem and Mineral Society meets the last Thursday of each month, except for November and December, normally at the Robert C. Carpenter Community Building, 1288 Georgia Road (Hwy 441 South), Franklin. Meetings begin at 6:30 PM.**

**The Club is a member of the American Federation of Mineralogical Societies and the Southeast Federation of the Mineralogical Societies.**



#### Franklin Gem and Mineral Society

##### Minutes: April 25, 2019

Susan Fritz/Diane Mason

The meeting was called to order by President Jane Morgan on Thursday, April 25, 2019, at 6:30 p.m. at the Robert C. Carpenter Community Building.

**Vice President** – Arlon Eldridge did not have anything new to report.

**Secretary** – Jane Morgan asked for any corrections, deletions or additions to the March 2019 minutes as published in The Mountain Gem. There being none, Lake Holland made a motion that the minutes be accepted and Ellen Williams seconded the motion. Voted and passed.

**Treasurer** – Lake Holland stated we were in the plus column for the month of March.

**Membership** – Tom Parker reported 43 members and three guests present. Guests stood and were recognized.

**Museum Manager** – Duane Haskell thanked Cindy Pease for her work on the outside grounds of the museum. He also thanked Cy Amrich for completing repairs in the bathroom floor and commodes. Our water bill is now back to normal.

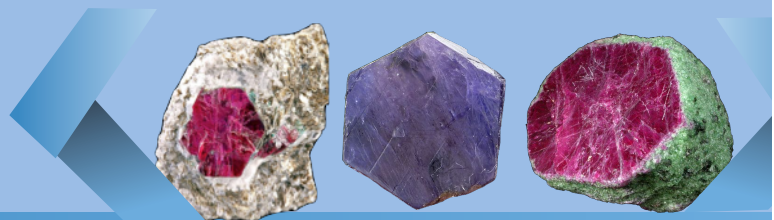
**Curator** – Sean Price reported that he is about to begin inventory.

**Curator Emeritus** – Fred Plesner reported on the trip to the radio station with Tom Parker. On 04/05, he and Marsha Harmon went to Swain Elementary to speak to 4<sup>th</sup> grade classes about rocks and minerals.

**Gift Shop** – Diane Mason reported sales of \$278.50 during the 04/13 Streets of Franklin sale. Vicki Knisley asked that anyone needing to be trained in hosting to contact Duane Haskell. She reminded

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## FGMS Minutes (continued)

everyone of other chores that can be undertaken in lieu of hosting such as labeling and pricing items for sale in the gift shop, cleaning, vacuuming and dusting.

**Editor** – Stacy Walbridge stated the deadline for the newsletter is Thursday, 05/16. He thanked Fred Plesner for his recent article submitted for the newsletter.

**Publicity** – George Fritz is absent this evening.

**Workshop Manager** – Cy Amrich did not have anything new to report.

**Education** – Marsha Harmon is absent this evening.

**Field Trips** – Lake Holland reported on two upcoming field trips: April 26-28 to Graves Mountain and May 11 to Mason's Ruby Mine in conjunction with the Winston-Salem club; and on May 18 to Chunky Gal.

**Gem Show** – Norman Holbert spoke about the need for volunteers in all aspects of the upcoming show. Mention was also made regarding the silent auction and the need for donations for same.

**Scholarships** – Al Pribble informed members about the recent mini-grant presentation on 04/04 to Macon Middle School's STEM program for end-of-grade assessment books.

### NEW BUSINESS:

Jerry Mason presented Certificates of Completion (cabochon class) to Duane Haskell and Jade Kale. Jade was absent this evening.

Door prize winning tickets were drawn by Doug Morgan.

Al Pribble made a motion for adjournment seconded by Fred Plesner. There being no further business the meeting was adjourned at 7:00 p.m. by president Jane Morgan.

Refreshments were provided by Stacy and Kathi Walbridge followed by a very interesting program on radioactive rocks presented by Sean Price. Rogers.

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## **GIFT SHOP NEWS**

**Diane Mason**

Well the summer is underway and we are now open six days a week. Sales are up and climbing. Thanks to all of the volunteers who support us and help out with sales. We also appreciate those who do the work behind the scenes such as cleaning, marking items for sale, rearranging shelves, dusting, and much, much more. We are looking forward to the future with some new items in the gift shop. If you haven't been lately, stop by and see us.

Vicki Knisley.....828-371-4954 or  
Diane Mason.....706-379-1718

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## **FIELD TRIPS**

**Marsha Harmon**

The Graves Mountain trip this year did not seem to draw much interest with our club members. Probably because we were getting ready for the May 10,11 and 12 rock show.

## **UPCOMING FIELD TRIPS**

Henderson County Gem and Mineral Society is hosting a Dixie Mineral Council field trip to Thermal City Gold Mine on Friday, June 21. The material from the site or riverbed will be easy to work with and a comfortable, covered flume area

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for sluicing will be available. In addition to gold, other minerals common to this area of NC include: moonstone, emerald, citrine, aventurine, smoky quartz, tourmaline, ruby, etc. You will have assistance if needed to identify your finds. Registration is required and limited to 35 people. There is a fee of \$10 per person. Contact Marsha Marmon or Lake Holland for more information.

**Registration through our club is required to participate on field trips as well as the safety equipment listed in the notice.**



## EDUCATION

**Marsha Harmon**

Scotts Creek school visited our Museum with 54 kindergarteners and 9 adults. Thank you goes out to Fred P., Stacy W., Kathi W., Nancy H., Jane M., Virginia B., Duane H., Al P., and John H.. A huge undertaking but it seemed to go well due to the above club members efforts.

## NOTES FROM THE CLASSROOM

**Diane Mason**

There continues to be a cabochon class offered about once a month. Virginia is active with her faceting classes and Wire I will begin on June 8. If you are interested in taking any classes keep in touch or check the bulletin board at the Museum often.

At the next meeting on May 30<sup>th</sup> we will have some visual displays from a few of our members who have recently attended classes at William Holland School of the Lapidary Arts in Young Harris, GA. They will be:

Sandy Brehens: basket weaving and chain mail  
John Mooney: faceting  
Jenny Mooney: wire I  
April LaFlamm: wire I  
Diane Mason: scrimshaw

Come and see the fine work these six have done. It might make you want to take a class.



**Cabochon Student Cindy Pease with Instructor Jerry Mason**



## MOTHER'S DAY GEMBOREE

On May 10th, 11th, and 12th the club sponsored the annual Mother's Day Gemboree. Several hundred attendees showed up over the 3 days to browse and purchase the colorful and varied selection of gems, minerals, slabs, fossils, jewelry, and Viking artifacts. In addition to the wire wrap, faceting, and cabochon demonstrations by club members a silent auction was held that matched the income from last year's raffle. The year's show saw several tables rented by members to display and sell their custom jewelry and minerals. John Hayes and Al Pribble sponsored a table to sell some unique minerals from a collection they had recently acquired. Many thanks to Kathy Green and Norm Holbert for organizing another successful show and to the many volunteers that helped make this another successful show.



**Al Pribble with unique minerals**

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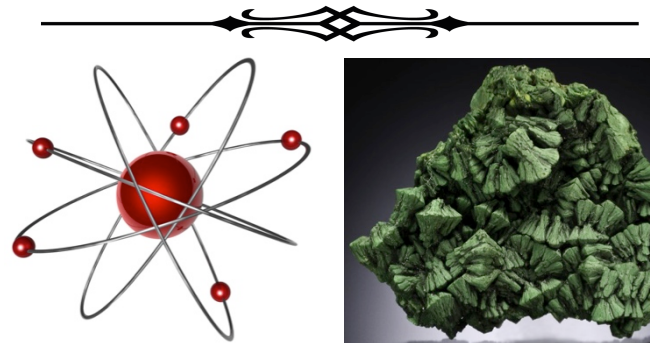
Kathi Walbridge w/ bracelets, pendants, and amethyst



The Happy Tear Down Crew after a job well done  
(We Thank You!)



Nancy McShane & Jade Kale w/ custom jewelry, fluorescents and fossils.



## Radioactive Minerals

Sean Price provided an interesting presentation on radioactive minerals that included an overview of naturally occurring radiation sources, different types of radiation and typical exposure levels.

There are two kinds of radiation: non-ionizing radiation and ionizing radiation.

Non-ionizing radiation has enough energy to move atoms in a molecule around or cause them to vibrate, but not enough to remove electrons from atoms. Examples of this kind of radiation are radio waves, visible light and microwaves.

Ionizing radiation has enough energy to knock electrons out of atoms, a process known as ionization. Ionizing radiation can affect the atoms in living things, so it poses a health risk by damaging tissue and DNA in genes.



Sara & Abby Young w/something for everyone



Tom Parker with his beautiful opals.

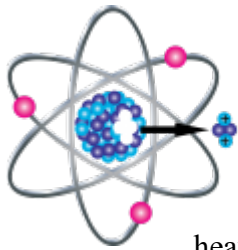
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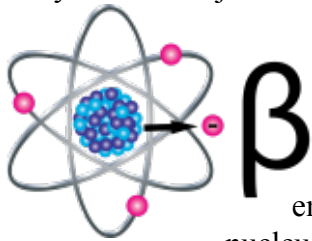
Radioactivity in minerals are caused by the inclusion of naturally-occurring radioactive elements in the mineral's composition. The degree of radioactivity is dependent on the concentration and isotope present in the mineral. For the most part, minerals that contain potassium (K), uranium (U), and thorium (Th) are radioactive.

The ionizing radiation that is emitted can include alpha particles, beta particles, and/or gamma rays.



Alpha particles ( $\alpha$ ) are positively charged and made up of two protons and two neutrons from the atom's nucleus. Alpha particles come from the decay of the heaviest radioactive elements, such as uranium, radium and polonium. Even though alpha particles are very energetic, they are so heavy that they use up their energy over short distances and are unable to travel very far from the atom.

Alpha particles lack the energy to penetrate even the outer layer of skin, so exposure to the outside of the body is not a major concern.



Beta particles ( $\beta$ ) are small and fast moving particles with a negative electrical charge that are emitted from an atom's nucleus during radioactive decay. These particles are emitted by certain unstable atoms such as hydrogen-3 (tritium), carbon-14 and strontium-90.

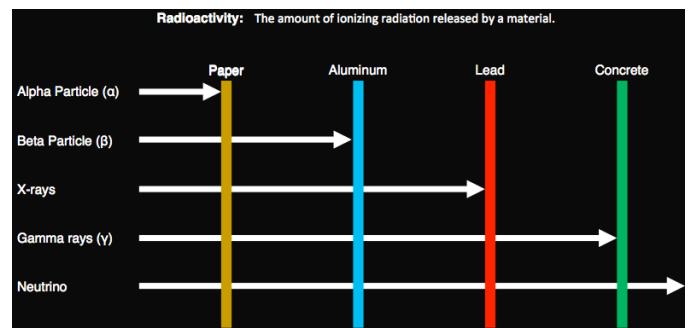
Beta particles are more penetrating than alpha particles, but are less damaging to living tissue and DNA because the ionizations they produce are more widely spaced. They travel farther in air than alpha particles, but can be stopped by a layer of clothing or by a thin layer of a substance such as aluminum. Some beta particles are capable of penetrating the

skin and causing damage such as skin burns. As with alpha-emitters, beta-emitters are most hazardous when they are inhaled or swallowed.



Gamma rays ( $\gamma$ ) are weightless packets of energy called photons. Unlike alpha and beta particles, which have both energy and mass, gamma rays are pure energy. Gamma rays are similar to visible light, but have much higher energy. Gamma rays are often emitted along with alpha or beta particles during radioactive decay.

Gamma rays are a radiation hazard for the entire body. They can easily penetrate barriers that can stop alpha and beta particles, such as skin and clothing. Gamma rays have so much penetrating power that several inches of a dense material like lead, or even a few feet of concrete may be required to stop them. Gamma rays can pass completely through the human body; as they pass through, they can cause ionizations that damage tissue and DNA.



There are four main radioactive isotopes that have lasted as long as the Earth:

- Uranium-239 (over 99% of all uranium) with a half-life of 4.5 billion years
- Uranium-235 (less than 1% of all uranium) with a half-life of 700 million years
- Thorium-232 (100% of Thorium) with a half-life of 14 billion years

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- Potassium-40 (0.01% of all potassium) with a half-life of 1.28 billion years. Since there is so little of this isotope compared to stable Potassium-39 and 41, potassium minerals are not considered radioactive (although they all are, to a tiny degree).

That means that essentially all radioactive minerals contain either uranium or thorium. The Rare Earth Elements typically include a percentage of uranium and/or thorium as trace elements, rendering many of them slightly radioactive.

There are other relatively common radioactive nuclides: Radium-226 and Radon-222 are both produced during the decay of Uranium. Radon is considered the most hazardous, because as a gas we breathe it into our lungs where it can attach until it decays. Luckily, Radon only has a 4-day half-life, which limits the build-up in a basement or from a concrete wall.

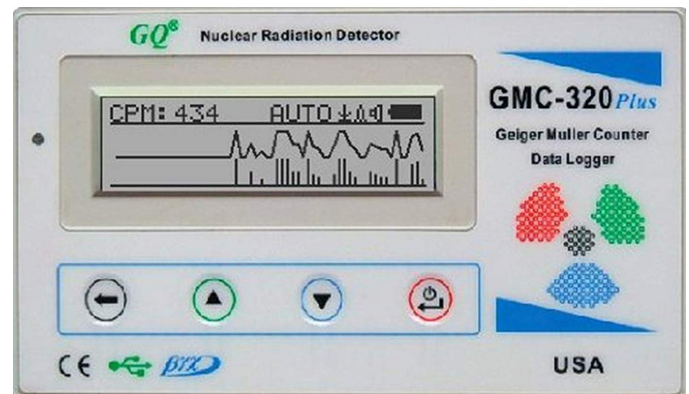
Another well-known radioactive isotope is Carbon-14, produced as a measurable trace by cosmic rays acting on atmospheric CO<sub>2</sub>, and with a half-life of 5,732 years. Since all organic material contains carbon and knowing the half life of Carbon-14, it is a useful measurement to determine the age of some fossils. Our bodies also contain carbon and are therefore naturally radioactive as well as the food we eat.

If there were an award for "Most Radioactive Food," it would go to Brazil nuts. Brazil nuts contain high levels of two radioactive elements: radium and potassium. Potassium is good for you, is used in many biochemical reactions, and is one of the reasons why the human body is itself slightly radioactive. Radium occurs in the ground where the trees grow and is absorbed by the plant's root system. Brazil nuts emit over 6,600 pCi/kilogram of radiation. Most of that radiation passes harmlessly through the body. For comparison, a whole body CT scan exposes you to 66,250 times more radiation than a Brazil nut. Meanwhile, the high levels of healthful selenium and other minerals

make these nuts healthy to eat in moderation.



For the mineral collector, inexpensive Geiger counters are now available that can measure the radioactivity of minerals in your collection. Sean demonstrated the use of one such Geiger counter at the end of his presentation, which is shown below.



This Geiger counter is available on Amazon for \$90

As a collector it makes good sense to keep radioactive minerals in a display case and/or dome, minimize handling which can release dust particles, immediately wash your hands and clothing that comes into contact with radioactive minerals, and vacuum or wash to clean your specimens - do not blow the dust off. These precautions are intended to prevent inhaling (or eating) radioactive particles. Most important of all, do not lick your rocks.

Sources: & additional information

<http://www.webmineral.com/help/Radioactivity.shtml#.XOVDx0movIU>

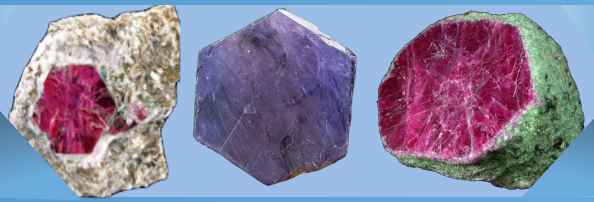
<https://www.epa.gov/radiation/radiation-basics>

<http://www.galleries.com/minerals/property/radioact.htm>

<https://www.thoughtco.com/common-naturally-radioactive-foods-607456>

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## UPCOMING SHOWS

### 1 June 2019: Colfax, North Carolina

Greensboro Gem and Mineral Club  
Free Admission & Free Parking  
Piedmont Triad Farmer's Market  
2914 Sandy Ridge Rd.  
Colfax, North Carolina 27235

### 1-2 June 2019: Marion, Kentucky

14th Annual Clement, Gem, Mineral, Fossil, and Jewelry Show - June 1 & 2, 2019  
At Historic Fohs Hall  
205 North Walker St, Marion, KY

### 1-2 June 2019: McCalla, Alabama

46th Annual Tannehill Gem, Mineral & Lapidary Show at the Tannehill Ironworks Historical State Park, 12632 Confederate Parkway, McCalla, AL 35111 This outdoor show is known throughout the Southeast as both a fun and a friendly show. The show is held Saturday and Sunday from 9:00 am to 5:00 pm. Admission to the show is free with paid admission to the park.

### 7-9 June 2019: Cartersville, Georgia

Bellpoint Gem Show; Clarence Brown Conference Center, 5450 State Route 20; Fri. 10-6, Sat. 10-6, Sun. 10-5; adults \$5, and free admission for children under 15 accompanying a paying adult; gem dealers from near and far selling beautiful minerals, fossils, jewelry, healing stones, rocks, cabochons, beads, crystals, gems and geodes

### 7-9 June 2019: Raleigh, North Carolina

Treasures of the Earth, North Carolina State Fairgrounds, 1-25 Blue Ridge Rd, \$5 admission (good for all 3 days), free admission for youth under 16

### 14-15 June 2019: Quarryville, Pennsylvania

Lancaster County Fossil and Mineral Club. Solenco Fairgrounds, 172 South Lime St, \$3 admission.

### 21-23 June 2019: Bedford, Indiana

Lawrence County Rock Club, 54<sup>th</sup> annual show, free admission, Lawrence County Fairgrounds, Highway 50.

## 2019 Meeting Schedule

June 27<sup>th</sup> -Georgia Rocks by Bill Witherspoon,  
Bill will conduct a walk at Black  
Mountain State Park 3pm 6/27 or 10am  
6/28

July 25<sup>th</sup> -Ice Cream Social/Show & Tell

August 29<sup>th</sup> – Club Elections

September 26<sup>th</sup> - Officer Installation and Banquet.

October 31<sup>st</sup> - TBD

November 14th - TBD

December 14<sup>th</sup> - End of Year Banquet/Rock Bingo

**June Newsletter Deadline is  
Tuesday, June 18, 2019**

**The Gem and Mineral Society of Franklin,  
North Carolina, is 501 (c)(3) organization  
and donations may be tax deductible.  
Please remember us when planning your  
estate.**

## The Next Meeting

The next meeting will be held at 6:30 PM on May 30<sup>th</sup>  
at the Robert C. Carpenter Community Building, 1288 Georgia Road (Hwy 441 South),  
Franklin.

## **Bart Cattanach WNC Geology**

**Bart Cattanach from the North Carolina Geological Survey is going to present an  
overview of WNC geology with a focus on Macon County and surroundings.**

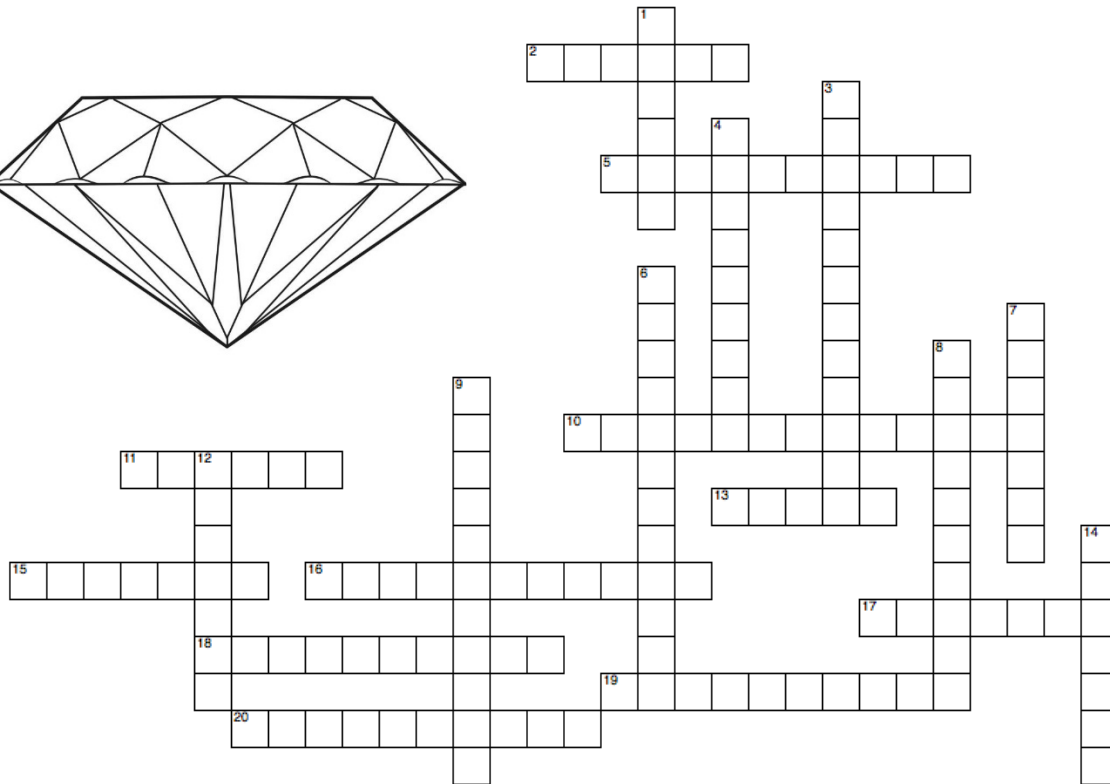
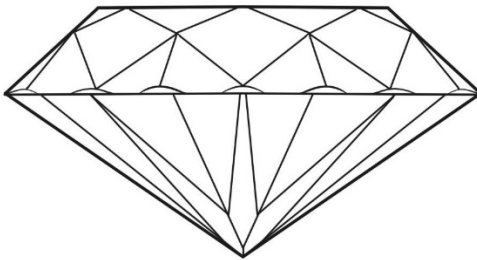
**FGMS Board meets the Tuesday before the regular meeting at 6:00 at the Museum**

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## Rocks, Minerals, and Fossils Crossword Puzzle



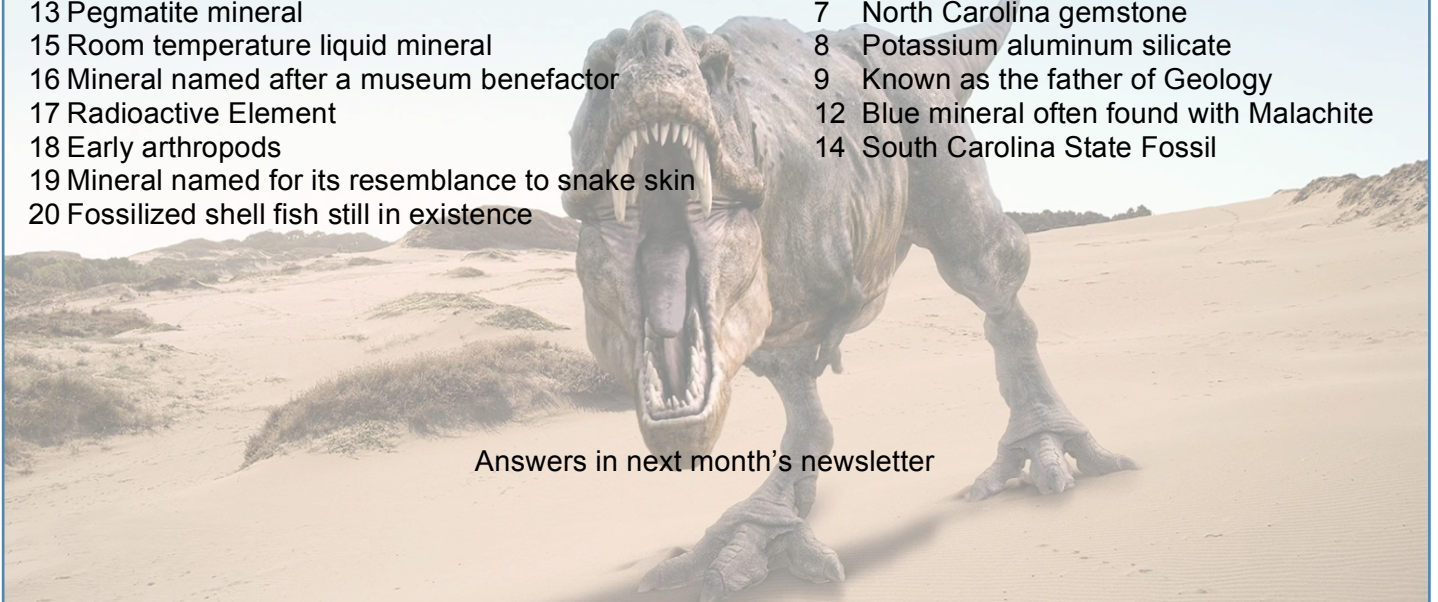
### ACROSS

- 2 Common volcanic rock
- 5 Fairy Stone
- 10 Device for measuring radiation
- 11 The most abundant mineral on the Earth's surface
- 13 Pegmatite mineral
- 15 Room temperature liquid mineral
- 16 Mineral named after a museum benefactor
- 17 Radioactive Element
- 18 Early arthropods
- 19 Mineral named for its resemblance to snake skin
- 20 Fossilized shell fish still in existence

### DOWN

- 1 Salt
- 3 Study of the development of life on Earth
- 4 A popular Southwest Mineral for Jewelry
- 6 Sedimentary food
- 7 North Carolina gemstone
- 8 Potassium aluminum silicate
- 9 Known as the father of Geology
- 12 Blue mineral often found with Malachite
- 14 South Carolina State Fossil

Answers in next month's newsletter





# Franklin Gem and Mineral Museum

25 Phillips Street, Franklin, NC 28734

FRANKLIN  
GEM  
& MINERAL  
MUSEUM  
HISTORIC JAIL  
ESTABLISHED 1850

FRANKLIN  
GEM  
& MINERAL  
MUSEUM  
OLD JAIL  
FREE ADMISSION

Phone: 828-369-7831  
In the Old Jail House  
FREE ADMISSION  
May 1 – October 31

Monday Thru Saturday: 12:00 PM – 4:00 PM  
November 1 – April 30  
Saturdays: 12:00 PM – 4:00 PM  
Open Year Round For Tours  
And Special Requests

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## ***THE MOUNTAIN GEM***

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Franklin, NC 28734

