

**The Woman's Auxiliary to the  
American Institute of Mining, Metallurgical,  
and Petroleum Engineers, Inc.**

Presents the 2002  
National Essay/Poem Contest

**My Most Useful Mineral**

WAAIME began in 1916 during World War I when a small group of dedicated women established a tradition for service in response to wartime needs. Later that service focused on education in the form of scholarship loans for engineering students. While scholarship loans for college students in the earth sciences are still our major purpose, it is only one focus of WAAIME's educational programs. Education For Tomorrow promotes the study of earth sciences, particularly as relates to mining, in elementary and secondary grades.

The main goal of the essay/poem contest was to encourage students and teachers to read, think and write about useful minerals in their everyday lives. There were 364 student entries from 13 schools. Forty winners were selected. Winners received a Certificate of Achievement, a cash prize of \$25, and a silver "Congratulations" ingot. Their entries are published in this booklet. All participating teachers were awarded \$125 worth of earth science materials.

Judging was by an independent panel of college students majoring in earth sciences. Many thanks to Dr. Tom Novak and Lori Harris of the Virginia Polytechnic Institute who coordinated the judging. Our deepest appreciation goes to the members of the VPI Burkhart Mining Society, a student chapter of SME, who spent many precious college student hours in reading and rating the essays and poems. Many thanks to Eric Gavin, the chapter President and his enthusiastic and dedicated team: Joe Basar, Robert Brawner, Curt Cappo, Joe Carnahan, Nathan Duryea, John Ellis, Omar Farooq, Kevin Flaherty, Doyle Hurst, Wes Johnson, JR Kane, Duncan Langlois, David Marston, Sean McLean, Kelly Meredith, Steve Miller, Hunter Moore, Tyson Murphy, Nora Oswald, Ryan Prosser, Emily Starver and Justin Smoak.

Maggie Jensen

2001-2002 National EFT Chairman

**2001-2002 Essay/Poem Winners of the WAAIME  
“My Most Useful Mineral” Contest**

Ms. Ragan's Class  
Bagdad, Arizona  
*Lyndsey Buchanan*  
*Robert Seevers*  
*Joseph Tarango*

Mrs. Brown's Class  
Woodward, Oklahoma  
*Manuel Garcia*

Ms. Fanella's Class  
McMurray, Pennsylvania  
*Kevin Danchisko*  
*Michael McGonigal*  
*Rebecca Ritter*  
*Patrick Maher*  
*Jeffrey Knell*  
*Stephanie Bowes*

Mrs. Amrhein-Hanley's Class  
McMurray, Pennsylvania  
*Danica M. Sheth*  
*Harry M. McNamara*  
*Emily A. Foglia*  
*Sarah G. Earley*  
*Julianne E. Helba*

Mr. Barnikle's Class  
Murfreesboro, Tennessee  
*Young E. Kim*  
*Parvi Saxena*

Ms. Rasmussen's Class  
Murfreesboro, Tennessee  
*Jessica Clements*  
*Sinifunanya Nwaobi*

Ms. Boyd's Class  
Murfreesboro, Tennessee  
*Katherine R. Perrine*  
*Jamie L. Boyce*  
*Adam C. Cicco*  
*Ricky Taylor*  
*Junior Orta*  
*Brian C. Eddings*  
*Brian J. Cochran*  
*Jessica L. Galligani*  
*Amber L. Hasler*  
*Cory A. Hearn*

Mrs. Faulkner's Class  
White Bluff, Tennessee  
*Jaime L. Primm*  
*Daniel J. Chaney*

Mrs. Bertola's Class

Helper, Utah

*Cameron J. Hansen*  
*Kylie C. Pierce*

Ms. Kofford's Class

Helper, Utah

*Daniel K. Houskeeper*

Mrs. Thayn's Class

Price, Utah

*Mario Trejo*

Mrs. Olsen's Class

Price, Utah

*Bobbie J. Campbell*

Mrs. Jorgensen/Mr. Prettyman's Class

Castledale, Utah

*Jade Fielder*

Mr. Lowe's Class

Surveyor, West Virginia

*Sara N. Matheny*  
*Miranda M. Benemann*  
*Jessica A. Rickard*

# My Favorite Mineral

Salt encompasses many things,  
The oceans, relaxation aides, and chicken wings.

Without salt in the sea,  
A lot less buoyant things would be.

Atlantic and Pacific,

They both have it.

Shampoo could not perform without it!

Bath salts can be a relaxing endeavor,  
You could soak in a tub forever and ever.

Different scents, aromatherapy is nice,

Lavender, green tea, and ginger spice.

Bath salts I think are the best,

They help you relax and get some rest.

Table salt is truly the winner,

Without it, it just wouldn't be dinner!

It goes with potatoes, greens and Grandma's roast,

Salt is what I definitely love the most.

But, I hate to be the bearer of bad news,

Too much Sodium Chloride just isn't good for you!

Miranda M. Benemann  
West Virginia

# Rock Car Rystal

A very long time ago there was a god named Rock Car Rystal. He owned all the land which is now called Arkansas, Alabama, Alaska, California, & Colorado. He was a tough god that won in the battle of good vs. evil. He was a good god that spoke CRYSTAL clear to his people. Everyone liked him except...the Evil.

Hades, the god of the underworld, was very upset about the fact that Rock got everything he wanted. Hades thought that he was spoiled. Rock got food, clothing, and respect from all of his people. In return, Rock gave his people land and the children little round wooden balls to play with. Hades had had enough of him. He thought that it was time to fight for the land.

One day, Hades flipped out and couldn't stand the fact that Rock was getting all of this attention. He was ready to fight it out. Hades decides to travel from his land, underground from what is now Georgia, North Carolina, Rhode Island, South Carolina, and West Virginia.

When Hades reached Rock's village, Rock was stunned. Hades was much smaller than Rock because Rock is over 44 tons and Hades is 36 tons. Hades still had hope though. Rock didn't want to fight because all he wanted was peace, but Hades demanded it. Rock refused so Hades had to find a way to get that land.

Hades begged and begged which made Rock much madder. Rock was so upset that he said OK to the battle. They went to fight on DIAMOND hill. Hades was there first, ready to fight. About one hour later Rock showed up looking very mad.

Hades attacked Rock first with his only friend, fire. Rock got hit in the arm, but he was OK. His people were cheering for him and on his side, while on the other hand all Hades had was his fire. Rock was getting hit too much - so his people built an ice-like wall around him so that Hades couldn't hit him anymore. Rock could still fight with this ice shielding him. Rock started to get revenge. Hades was done for. The last attack from Rock was the best. Hades started to catch on fire and his face was very sad. The fire started to die down, but no Hades. Hades was gone. As soon as Hades disappeared, the ice covering Rock burst out into what appeared to be clear rocks. The people then named it after Rock Car Rystal in honor of his braveness and soul. The new clear rock was called Rock Crystal.

Now the children of the village were happy because their wooden balls turned into great big crystal balls. The men of the village were so amazed with this crystal, that they started using them for rings when they took their wives hand in marriage. They also got all the land of Hades. It made all of the families happy because they were free from Hades & free from the evil.

Now in 2001, Rock Crystal is used for crystal balls, fake diamond rings and for watch & clock regulators. The word "crystal" comes from the Greek for ice, since the Greeks thought that clear quartz was permanently solidified water. The largest Rock Crystal was said to be over 44 tons.

Stephanie Bowes  
Pennsylvania

## Jade

This mineral is useful because... Jade is used to describe either of the two hard, dense, usually green gemstones. These gemstones are Jadeite and Nephrite. Both jadestones have been carved into jewelry, ornaments, small sculptures and tools from the earliest records.

Jadeite and Nephrite both differ in the crystalline structure and chemical composition. In each of the minerals, the microscopic crystals are tightly interlocked to form a compact aggregate. Jadeite is a silicate of sodium and aluminum and is classed as pyroxene.

In order for Jadeite and Nephrite to be “gem” quality, they must be composed of tough, interlocking fibers. These fibers create a material suitable for carving. The most common color of Jade is light green, but it sometimes occurs in dozens of different colors.

The most valuable form of Jade is known as the “Imperial Jade.” The Imperial Jade is an emerald green. Mottled green and white is another popular color of Jade. Rarer colors of jade are yellow, pink, purple, and black.

The finest quality of Jade is found in Myanmar. This place is formerly known as Burma. This Jade is known as “Chinese Jade.” The Chinese Jade is exported to China where it is carved into gems and figures. Chinese Jade has a higher market value than Jade from other locations. Another type of Jade is called the “Russian Jade.” The Russian Jade is a leek-green variety found near Lake Baikal in Russia.

Jamie L. Boyce

Tennessee

## Amethyst

My most useful mineral is amethyst. Amethyst is a semi-precious stone. It is the most highly prized form of quartz. What I like most about it is the violet, purple color. When heated amethyst loses that color. The color comes from iron or titanium impurities. Amethyst is also made from silicone dioxide, which therefore quartz is made up of it too. The finest crystalline amethyst occurs in gas cavities in volcanic rocks in India, Uruguay, and Brazil. It is also February's birthstone. It stands for sincerity and royalty. The name "amethyst" is derived from a Greek word meaning "not drunken" or "sober."

In biblical times, amethyst was believed to cause lovely dreams and visions. It is associated with Bethel, the place of dreams where Benjamin was born. Indeed, the tribe of Benjamin had the honor of having its name engraved on the amethyst, and amethyst was one of the twelve minerals adorning the linen bag worn by the high priest.

Amethyst is one of the most popular gems. It has a beautiful color and is rather common, making it an inexpensive, widely used gem. Most amethyst is faceted into jewelry cuts and some are cut as cabochons. Large, massive chunks of amethyst banded with quartz is sometimes carved into ornaments. Amethyst is also popular among mineral collectors. Small geode sections and tumbled stones are sold to amateur collectors, while more experienced collectors go for the rare prismatic crystals and giant geode sections.

Lyndsey Buchanan  
Arizona

## Its Common Name Is Coal

Many, many years ago;  
Right here in Carbon County...  
Dinosaurs walked and lived and died  
Leaving an energy source in bounty:

That source, called coal, is used in many ways,  
It heats our homes through winter's cold  
And cools them in summer days.

My Grandpa Jack works in a mine,  
He says it's very dark.  
They use a lot of different tools;  
The kinds that won't cause sparks.

Coal is used for many things.  
Energy is number one  
Without this rock the miners dig  
We'd depend more on the sun.

What else besides energy does coal provide us?  
Ink resins. Compressed gases, some asphalt's even plastics;  
The list in its entire form is really quite fantastic.

A lot of people lost their lives  
Coal mining in the past.  
I think we should keep that in mind so coal energy will last.  
Turn out lights, recycle cans, don't waste without a care;  
Because one day, there will be no trace,  
that the dinosaurs were there.

Bobbie J. Campbell  
Utah

## **My Most Useful Mineral Is Gold**

I believe that gold is the most useful mineral there is because of all the different purposes it has had throughout history.

Gold changed the lives of many Americans. In the nineteenth century when gold was found in the Rocky Mountains and California, hundreds of people moved out west to mine the gold in hopes that it would change their lives for the better. Many people became really rich after the gold rush was over because of how easy the gold was to mine. The prospector would have a circular dish filled with gold bearing sand and he put the dish under a small river or stream and washes the gravel away and leaves the gold left in the pan.

Today we use gold for coins, jewelry, and decorative items, but gold can be found in ancient temples in China and in your very own home and I think that if there is a mineral that widespread then I think that mineral should be known as the most useful mineral.

Daniel J. Chaney  
Tennessee

## Platinum

Platinum is a very useful and valuable mineral, although it is now mainly thought of as only a mineral used in jewelry. It can be considered a mineral because it is mined. Antonio de Ulloa discovered platinum in South America in 1735. Platinum is a silver-white metal that holds even more value than gold. Its atomic number is 78 and its mass is 195.08. It is also one of the heaviest metals. Platinum has very unique properties, which make it valuable. First of all, it is very easily shaped. It can be shaped and worked into almost every possible way, from thin wire to large sheets. Platinum is a solid whose melting point is 2045k and its boiling point is 4100k. The metal was also used by pre-Columbian Indians. Platinum occurs natively, and is accompanied by small quantities of iridium, osmium, palladium, ruthenium, and rhodium. These all belong to the same group of metals. Platinum does not oxidize in air at any temperature. However, halogens, cyanides, sulfur, and caustic alkalis corrode it. Platinum resistance wires are used for constructing high-temperature elective furnaces. The metal is used for coating missile nose cones, jet engine fuel nozzles, jewelry, thermocouple elements, electrical contacts, corrosion-resistant apparatus, in dentistry, sealed electrodes in glass systems, and so on. Platinum is an excellent catalyst, such as in catalytic converters for cars. So, you can see that Platinum is a very useful mineral, which is used for more than just jewelry.

Adam C. Cicco  
Tennessee

My favorite mineral is a diamond. I like diamonds because they are pretty and very useful. I also like them because they are hard to break. They sparkle and they make pretty rings. Another important reason I like diamonds so much is because they are used in industry to make things I use every day.

Diamonds are used for jewelry, but of every five tons of diamonds mined, only one ton is used for jewelry. The small and imperfect stones that make up the other four tons are industry diamonds.

Diamonds are ideal for mechanical parts that must resist wear, undergo sudden temperature changes from freezing cold to very hot, not change size, not create friction, and not rust or tarnish. How can diamonds fulfill all these qualifications? First of all, a diamond is one of the hardest known materials. Secondly, diamonds conduct heat away from the part being cut. Another important property is that heat does not melt diamonds.

Diamond cutting tools cut much faster and more accurately than other tools. A diamond metal-cutting blade used by the Du Pont Company can slice metal (except steel) thinner than human hair. Diamonds so small that they can be seen only with a magnifying glass are used to polish hard metals.

Even though when we think of diamonds we think about rings, necklaces, and bracelets, most of the diamonds used every day are used in industry. The reason I like diamonds is because they are practical as well as pretty.

Jessica Clements  
Tennessee

## **“My Most Useful Mineral”**

We all know sulfur way too well,  
for its rancid, horrible smell.  
Rotten eggs would best describe it,  
there is no other smell quite like it.

Symbol “S” and color yellow,  
like the shade of lemon Jello.

Some common uses one can find  
and others that will blow your mind.

Strike a match to light some fires;  
Goodyear uses it in tires.

Cavemen might have thought it neat  
to shoot instead of spear their meat.

Sulfur brightens up the night  
just add a bulb and you have light  
Ignite a fuse and sparks will fly  
on each and every 4th of July.

A nonmetallic element,  
it’s even used to make cement.

A useful mineral indeed,  
sulfur surely takes the lead.

Brian J. Cochran  
Tennessee

## **“My Useful Mineral”**

### **Flint**

In the Pleistocene Epoch lives a man named Frank,  
He works with another man named steel.  
He always sleeps on a rock hard bed,  
Flintstone is his name and he can easily “crack” a deal.

He can be found in a village name Chalk,  
Deposits from Great Britain, U.S. to  
France and other areas of the world.  
His rich crystal structure can only be seen  
by the eyes of a hawk,  
His job is tough for on a spear he is hurled.

He’s lucky for he is not chipped or pounded like some,  
But can easily be flaked off with stone.  
From a variety of Quartz people in the Stone Age he came,  
Mostly everywhere in the world  
his kind is found so he is not alone.

Many fires he lights,  
By striking a deal  
with Mr. Steel. Many battles he fights,  
He can shed blood but cannot heal.

Sparks he makes,  
In pottery he is an element of the pot,  
He can cut as a weapon and be cut into flakes,  
Dark colored he is and because of the many things  
he can do is now well sought.

Kevin Danchisko  
Pennsylvania

## **My Most Useful Mineral: Amazonite**

Amazonite gives stamina, faith and compassion,  
Comes in green to blue-green, the latest in fashion,  
It gently harmonizes the heart and soul,  
Soothing the nerves, so life is a stroll,  
A confidence builder, brings trust and peace,  
Amazonite is said to brighten your teeth,  
These metaphysical uses do seem abundant,  
But the information has not even begun yet,  
This mineral comes from the crust called feldspar,  
Which is more than all of the minerals combined by far,  
Its hardness can range from 6-6.5,  
And its perthitic texture is visible to the eye,  
This mineral's name is from a great river,  
But hasn't been found throughout Brazil, ever,  
Classified into tektosilicate,  
Its chemical composition is  $\text{KA1Si3O8}$ ,  
So as you can see, it's much more than a jewel,  
Amazonite is definitely cool!

Sarah G. Earley  
Pennsylvania

Diamond is named from the Greek word “adamas,” meaning invincible. Diamonds are formed under immense temperatures and pressures, such as formed in pipes leading to ancient volcanoes. The most famous diamond mine is at Kimberly, South Africa. It follows an old volcano pipe for more than two kilometers vertically into the earth. Diamonds are also formed as placer deposits. Carbon atoms can form together to form a very stable mineral. Diamonds have atoms so tightly bonded together that they are one of the hardest substances known. Pure diamond is colorless and transparent. It commonly forms a shape like two pyramids base to base. Jewelers make use of this property when they cleave rough diamonds to make jewelry. Each of the faces is created by splitting the diamond parallel to the faces of its crystals. Diamond is not always colorless; if it contains impurities, it may be a darker color. Some diamonds are almost black, which is very rare.

Brian C. Eddings  
Tennessee

## **My Useful Mineral**

Not far from my house are some mountains. I love to go there and climb to the top of them and look down at the town I live in. I can see a power plant too. It is hard to imagine that inside this mountain that I'm standing on is a coal mine. I think coal is the most useful mineral and this is why.

The coal is mined and sent to the power plant where power is generated. When we turn on our TV or our computer or even our light switches, we must remember that coal must be mined so we can have power.

I also like to imagine how it must have looked when the dinosaurs were living here. There must have been a lot of green plants to make so many layers of coal.

Coal also provides good jobs. Both my mom and dad work at a coal mine. Lots of my neighbors either work at a coal mine or the power plant.

Some people think that coal was how people used to heat their homes and that it is no longer necessary or important. That is not true. Millions of tons of coal are needed every day so we can have the power that is needed in your homes.

Coal is very cool, and very useful. That is why I think coal is my useful mineral.

Jade Fielder  
Utah

## My Most Useful Mineral, Gypsum

Jolly always took Gypsum for granted. That is, until the day that she broke her leg. She had just gotten a cast placed on her right leg, and her mom was driving her home from the hospital. When she stepped out of the car, her cast crumbled into a thousand tiny pieces. Jolly was shocked and upset. She immediately sent the pieces to a science lab to be tested. When the scientists contacted her, they told her that the Gypsum was missing from the plaster that they used to make the cast. Jolly was confused because she didn't really know what Gypsum was. The scientist gave her this poem:

Gypsum is known for its flexibility,  
Found in Tyrol, North America, and Italy.

It is used when producing cement,  
Making fertilizers, and for ornaments.

Gypsum comes in many colors,  
Gray, orange, pink, and many others.

With a streak of white, and a hardness of two,  
If you bend it too hard, it will break on you!

After reading the scientist's poem, Jolly understood that Gypsum was very important industrially, and commercially. From that day on, Jolly told people about Gypsum wherever she went. One thing was certain. Jolly never took Gypsum for granted again.

Emily A. Foglia  
Pennsylvania

**“My Most Useful Mineral is”...  
TOPAZ**

Golden, like the leaves of fall,  
November’s magical stone,  
Rich, rare, imperial Topaz,  
Golden-orange and glowing,  
Jeweler’s friend, in great demand.

Crystalline, an irregular chain of octahedrons,  
An aluminum atom, four oxygens bound,  
Clear to translucent,  
Heated to make a blue,  
As blue as bright autumn air.

Neosilicate subclass with hard, strong bonds,  
Dense ionic units, golden topaz, rich, rare,  
Named for Topazious,  
An ancient island in a sea of fog,  
Hidden, lost.

Hard, precious and mysterious,  
Golden, secret, like its namesake,  
Octahedron, as the eight-legged scorpion.

Beware the bite of cold November’s air.  
Beware the sting of the secret, golden scorpion:  
Rich, rare, golden topaz.

Jessica L. Galligani  
Tennessee

# **GOLD**

1. I am nuggets and flakes.
2. I am worth a lot of money.
3. I am very valuable.
4. I may occur in quartz.
5. I am money.
6. I can be fake or real.
7. I am used to buy things.
8. I am used for jewelry.
9. I am very useful for things.
10. I am lumpy.
11. I am a soft metal.
12. I was discovered in California.
13. I am yellow gold.
14. I am used in electronics.

**I AM GOLD!**

Manuel Garcia  
Oklahoma

## **Sand Is Good**

There are tons of minerals. Gold is very valuable, and silver makes nice jewelry. Both of these minerals are rare, but my favorite mineral is not rare. In fact, this mineral takes up 27.7% of the earth's crust. Only oxygen is more common. Beaches are full of my favorite mineral. It is silicon, the main mineral in common sand.

Why do I like such a common mineral?

First of all, sand is good. I like to go to the beach. When I go to the beach I like to play in the sand and make sand castles.

Silicon is also the main ingredient in glass. We can't make glass without silicon, and I like to have glass because we couldn't have light bulbs without it being a fire hazard. Without glass I couldn't have a window in my room.

I like sand. I like glass. But the main reason I like silicon is because without silicon the modern computer would not be possible. Before silicon chips, computers took up hundreds of square feet, because they used thousands of glass transistor tubes. Silicon is the main part of silicone. Silicone is a semiconductor. This means it works partly as a conductor of electricity and partly as an insulator. Silicone made integrated chips possible, allowing smaller computers because the thousands of glass tubes were unnecessary. I like computers because I can play computer games. A computer also made it possible for me to type this report.

Cameron J. Hansen  
Utah

## **My Most Useful Mineral is...**

### **Amethyst**

Amethyst is a light to dark purple gemstone. It is a variety of quartz, which is founded in six-sided, pointed crystals. The color of this gem is believed to be caused by impurities such as iron and manganese. The “oriental amethyst” is a purple variety of the mineral corundum. Amethyst is the birthstone for February, the sign of zodiac is Aquarius (Jan. 20-Feb. 18), and Amethyst’s characteristic is sincerity.

#### **The Legendary Creation of Amethyst**

Amethyst was named after the lovely maiden, Amethyst. It happened to be that one day Amethyst was on her way to go worship the shrine goddess, Diana. And Bacchus, the god of wine and conviviality, had gotten angered that day and said, “The first person to come past my path will be eaten by tigers.” So, the goddess Diana saw what was going on and turned Amethyst into a stone, to save her from the harsh death. When Bacchus saw this he repented and poured some wine onto the stone, staining it purple. It is also said to be that Roman women have claimed that the stone, Amethyst, would keep their husbands faithful.

#### **Amethyst in the Bible**

Amethyst is also talked about in the Bible. It talks about how Aaron, who was the high priest of the Hebrews, wore a breastplate with 12 precious stones on it. Amethyst was the 3<sup>rd</sup> stone on the 3<sup>rd</sup> row. Even in the New Testament, this gem became the foundation of the New Jerusalem (which is described in Revelation). Each prophet had a gemstone and “Math,” who had the gift of tongues and filled with desire to please and serve God, had Amethyst.

#### **The Royal Gemstone**

Kings, queens, and religious sects had long treasured this stone. They say it’s because of its “rich royal” color. In the 15<sup>th</sup> century the French fleur-de-lis brooch (the design is set with sapphires and amethysts) could only be worn by Royal Family, on ceremonial occasions.

Amethyst is mostly found in Brazil and Zambia and other places, but the only place in the U.S. that it is found is in Arizona. Amethyst has always been desirable but when fashion includes rich palette of lilacs, lavenders and royal purples that is when it’s most popular.

Amber L. Hasler  
Tennessee

## **My Most Useful Mineral Is Petroleum**

Petroleum is also referred to as “black gold” because it is so valuable to mankind. Petroleum comes from the earth as a dark liquid that contains hundreds of different materials. From these materials, men make thousands of different useful products. Some of these products are gases so light and colorless that they are invisible. Other products of petroleum are heavy, hard, and tough.

Petroleum provides man with many of his useful fuels. Gasoline is the most useful of these fuels. It powers automobiles that families use every day, and many of the trucks that run on the highways. Jet fuel is another type of fuel men use every day, and many of the families use petroleum to heat their houses today.

Petroleum also furnishes many special products every day. The wax on the paper that keeps the bread fresh is a petroleum product. The cleaning chemicals used to freshen and clean clothes are also petroleum products. The other thousands of petroleum products include things such as plastics, rubber tires, and paint.

The word petroleum comes from two Latin words: “petra,” meaning rock, and “oleum,” meaning oil. People gave it its name because they first saw it seeping out of the earth’s cracks. Oil is what people call petroleum today. Oilmen use the name crude oil to describe petroleum as it comes straight out of the earth. But it is mostly useful to me because it fuels our truck to get to town and back.

Cory A. Hearn  
Tennessee

## **My Most Useful Mineral - Topaz**

I am a mineral but here is the game:

Try to figure out my common name.

My nature, I am colorless, but will give you a clue

Through irradiation, I change and you know me as blue.

In Mexico, South America, Russia and the US,

My kind is found from the east to the west.

I am a gemstone so lovely you see,

They dedicated the month of November to me.

My sign is Sagittarius; I am most valuable when I'm pink,

Or imperial (yellow-brown) that is even prettier don't you think?

Scientifically speaking I am not the best,

I damage easily if put to the test.

Instead, I am best with gentle wear,

To aid meditation, and help reduce despair.

Aluminum fluorosilicate is my official name,

But you know me as Topaz; I'm one and the same.

Julianne E. Helba

Pennsylvania

# **MY FAVORITE MINERAL COAL**

December 6, 2001

Coal is a solid, dark-colored fuel found in deposits of sedimentary rock. Coal is burned to produce energy and is used to manufacture steel. It is also an important source of chemicals used to make pharmaceuticals, fertilizers, pesticides, and other products. Coal comes from ancient plants buried over millions of years in the earth's crust. Coal, petroleum, natural gas, and oil shale are all known as fossil fuels because they come from the remains of ancient life buried deep in the earth.

Coal is rich in hydrocarbons (compounds made up of the elements hydrogen and carbon). All life forms contain hydrocarbons, and in general, material that contains hydrocarbons is called organic material. Coal originally formed from ancient plants that died, decomposed, and were buried under layers of sediment. As more and more layers of sediment formed over this decomposed plant material, the overburden exerted increasing heat and weight on the organic matter. Over millions of years, these physical conditions caused coal to form from the carbon, hydrogen, oxygen, nitrogen, sulfur, and mineral compounds in the plant matter.

Plant matter changes into coal in stages. In each successive stage, higher pressure and heat from the accumulating overburden increases the carbon content of the plant matter and drives out more of its moisture content. Scientists classify coal according to its fixed carbon content, or the amount of carbon the coal produces when it is heated under controlled conditions. Higher grades of coal have a higher fixed carbon content.

Daniel K. Houskeeper  
Utah

Pure sulfur is a bright, golden yellow.  
Its tolerance for heat and humidity is very low.  
From volcanic springs sulfur usually exits,  
but it can also be taken from petroleum deposits.

Sulfur is soft and brittle; its weight is very light.  
It melts at only 226° Fahrenheit!  
Sulfur also dissolves in warm water.  
Heated, it gives off a blue flame and fumes that are a bother.

If you ever smell heated sulfur,  
your nose will surely suffer.  
“Pinch my nose,” you will beg,  
“for it smells like a rotten egg!”

Although its odor is rather dreadful,  
its uses are very plentiful.  
In matches and explosives, sulfur is a must.  
Fungicide and insecticide producers- in sulfur they trust.

Sulfur in sulfuric acid is crucial  
because it makes products that are essential.  
For instance,  
sulfuric acid in plastics is of great importance.

That there are so many uses for sulfur is great,  
which is why I can so confidently state,  
“Sulfur is my most useful mineral.  
In our lives, it is essential!”

Young E. Kim  
Tennessee

# **My Useful Mineral**

## **Quartz**

Corey Quartz is like many other rocks. He is part of an international family spread all over the world. He lives everywhere. He loves hot spots - Hawaii, Japan, Alaska... Alaska? He lives near volcanoes. He is the base of many minerals, which have his trademark sign - excessive silica. Silica. Yeah, the stuff in the little pouch in the new shoes you got last week. The same stuff in the container of bread crumbs in your pantry.

He is a very valuable mineral, considering that wherever he goes his sidekick, gold, often follows. He surrounds valuable minerals all over the world - from the volcanoes in Japan to the sand on the beaches of Florida. Sand? Yeah, most sand is made up entirely of quartz.

He is not only useful in food manufacturing, but in machinery as well. He can be used to make and shape parts for machines and some parts for machines are made of him.

He comes in many varieties: smoky, rose, amethyst (purple), and milky. They reflect his personality, and the personality of the person who is lucky enough to own him.

Jeffrey Knell  
Pennsylvania

# **“My Most Useful Mineral Is” Ruby**

Ruby is the color red,  
And has a hardness of 9 the mineralogist said,  
It has a streak of white,  
And can sometimes be very light.

It is used in rings for an anniversary,  
And it has a hexagonal symmetry,  
Ruby is the birthstone for July  
And is not found in the sky.

Ruby inspires love  
And does not have anything to do with a dove,  
Ruby comes from the Latin word ruber,  
And it is very super.

Ruby protects you from witchcraft  
You probably wouldn't smell a ruby even if you caught a draft  
If you have a ruby you are supposed to have wisdom,  
But this is very seldom.

Patrick Maher  
Pennsylvania

## **My Most Useful Mineral Is...**

My most useful mineral is sodium chloride (more commonly known as table salt). In the following essay, you will discover that sodium chloride is used in cooking. It is a vital ingredient in staying healthy and how it is used in industry. So sit back and enjoy.

### **~Preparing Food**

In the act of preserving food, table salt helps by creating a hostile environment for certain microorganisms. Inside foods, salt brine dehydrates bacterial cells, and slows down bacterial growth and spoilage. Sodium chloride also promotes the development of color in ham, bacon, and hotdogs. It produces color in processed meats that consumers find appealing. And as you all know, it contributes to the flavor of most all foods, but don't use too much. Doctors recommend about one teaspoon of salt per day.

### **~Sodium Chloride and your Health**

Sodium is an essential nutrient, since it is a mineral that your body cannot manufacture by itself. Because it is so important, many interacting mechanisms store up salt. This guards against under-consumption and the threat it places against your body's nerves and muscles.

Chloride is equally important; it aids potassium absorption, is a component of digestive stomach acid, and enhances your blood's ability to carry carbon dioxide from respiring tissues to the lungs.

### **~Industry**

In industry Sodium Chloride is used to ensure food safety, regulate fermentation, and process meats and sausages.

Well, I hope you got something out of my essay, I know I did. Thanks for reading it. Bye!!

Sara N. Matheny  
West Virginia

# **“My Most Useful Mineral”**

## **Sulfur**

Sulfur is very mellow,  
Its only color is yellow,  
It is found in meteorites,  
Without it many creatures would bellow.

It comes in coal, crude oil, and natural gas,  
But if you were asked to eat it chances are you would pass.  
On my list to eat it comes in last,  
For it would not be a blast.

Even though it smells like feet,  
It comes in eggs, dairy products, and meat.  
Sulfur is used in fire works and gunpowder,  
To make the guns boom louder.

Onions, cabbage, and soybean flower,  
Obtain sulfur as soil power.  
It is important to the human diet,  
Because it contains iron pyrite.

Scientists found it comes from the atmosphere of Venus,  
But it was not brought to this planet to lead us.  
Because this mineral really stinks,  
Don't ever walk by it without giving it a wink.

I learned a lot about rocks and minerals,  
And found that none taste like grandma's dinner rolls.  
If I had to research sulfur one more time,  
Chances are I would start to whine.

Michael McGonigal  
Pennsylvania

# **MY Most Useful Mineral**

## **Uraninite**

Uraninite has a hardness of 5-6 and is steel gray-  
And is used to make the most powerful bomb of the day.

It's the chief producer of uranium ore-  
Iraq has a secret store.

Its radioactivity is dangerously high-  
And has the power to blow the world to the sky.

Uraninite helps generate nuclear power-  
And makes third world countries cower.

It's also the first mineral in which helium was found on Earth-  
But its radiation will make babies deformed at birth.

It blew some Japanese cities to the ground-  
A big boom was the last sound.

When you split a uranium atom, the energy is released-  
And ruins the crops that would have been part of a feast.

Uraninite is found in western Europe, Canada, and the USA-  
And powers many conveniences we use today.

Some fear that it will bring the end of the world-  
And make cities look like at them a giant asteroid was hurled.

Everyone feared in the Cold War-  
That someone would use uraninite's uranium ore.

Harry M. McNamara  
Pennsylvania

# **The Power of a Ruby**

Swirling flames of fiery red  
Mystical streaks of plush pink  
Ruby, I am.

Fluorescent in the light of ultraviolet rays  
Brilliant in the dark of a black light  
Ruby, I am.

Second to the hardest mineral known to mankind  
And at my best, I am of more rarity than your precious diamond  
Ruby, I am.

You are unaware of my hidden talents  
practiced in both industrial and commercial settings  
For they are masked behind my daunting and dazzling red beauty  
Ruby, I am.

Found all over the world in distant lands  
So beautiful and uniquely different  
Ruby, I am!

Sinifunanya Nwaobi  
Tennessee

## Aquamarine

Aquamarine, aquamarine blue you make me see, or green I read. I see you on my ring beautiful indeed. I got you as a gift, then you I shall keep. To blazon you, is as to rebirth in a deep dream with a rainbow and such a spectrum, 'tis how you are indeed. O such a lie, spectrum you are not, most valuable you are to me in sky blue and this is how I want things to be. Aquamarine, aquamarine beautiful you are my aquamarine. Oh tell me my aquamarine, shall it be true my yellow-green beauty, that you turn blue by heat or is it somewhat of a sing along myth. My beautiful mineral where can thou be from? Brazil, United States or so I heard, and recently from Afghanistan some bird sang along. Where are you from my precious stone? Good that your rich in color, shall not been so though, many ancient like you, are guilty of not having your color, like me wearing you with great proud and honor indeed shall I thank you, my beautiful aquamarine stone.

Junior Orta  
Tennessee

Chromium, #24 on Father Mendeleev's periodic table,  
A transitional metal maybe?  
Chromium comes from a word meaning color,  
Could it be because chromium help makes  
jewels of psychedelic colures?  
Cr+3, Cr+6, which one's helpful and which one's toxic?  
One helps lose weight, blood sugar not to elevate  
But one, mostly when inhaled, causes cancer and  
Also pollutes our nice clean air!  
Louis Nicolas Vaupuelin, in 1797  
A French chemist who discovered it!  
Now chromium, the nontoxic kind!, is very helpful,  
But 4 in 5 people, athletes the most,  
Need to eat more to promote healthy muscle growth!  
But the foods it's found in, in its natural state, are rare they say,  
In our fast food kind of place.  
Not very nice sounding let's try some supplements!  
But is it hard to over dose?  
NO way they say, 175,000 tablets a day!! At a 200mcg dose.  
A trace mineral it helps us to live,  
but is it harmful? Come on what gives?  
Studies have been done, people have talked,  
but when it comes down to it.  
Cr+3, well it's just not!  
Side effects can sometimes occur, like the rubies that come,  
All smoothed down just like pearls.  
Now some forms have been known to cause a little harm,  
But only when humans mess around, and get it wrong.  
So as long as we stay out, and just let nature do its thing,  
Chromium will continue to help us,  
just like it has, from beginning to end.

Katherine R. Perrine  
Tennessee

## **The Diamond**

The diamond, clear with such beauty, is mined upon African countries. They polish the diamond then break and shatter it into pieces to create jewelry. Then it is made into necklaces, bracelets, watches and earrings that we wear.

The diamond was most likely formed millions of years ago in molten lava. The lava would flow to the Earth's surfaces through vents which are also known as pipes. It cooled and solidified into Kimberlite, which is a blue rock. The diamond miners know the Kimberlite as blue ground.

The diamond, when it is found or mined, looks like fragments of glass. As less as two or more of some gems are cut by a rough stone. The diamond is first split or sawed along the grain of the stone. Then the pieces are mounted in a lathe. Then the very fast turning gem will be shaped roughly by a diamond-tipped tool. Then the stone is placed in a solder dop, and the facet is ground on the surface of a spinning iron disk which is bearing a paste which is made of diamond dust and also olive oil. Then cutting of each facet will require the changing of the positions of the stone in the dop. In order to grasp any larger diamonds, dops are equipped with mechanical holding fingers.

The diamond, you can say, is a girl's best friend. Why, diamonds are clear and beautiful and that's all a girl could want. Another reason why the diamond could be a girl's best friend is that it's on jewelry, girls love necklaces, watches, bracelets and earrings. Some people just like diamonds to sell them for as much money as they can get.

Kylie C. Pierce  
Utah

## **My most useful mineral is...**

Platinum is an attractive, precious, heavy element

Its color is the same as an African gray elephant

Platinum is used to make silverware

Platinum itself is not very rare

Platinum may even occur on the teeth of thugs

Sometimes it's on the outside of coffee mugs

Platinum is considered more valuable than gold

It was discovered in 1557, man that's old!

Platinum is the most scarce metallic element around

Platinum commonly occurs in ore and in the ground

Platinum makes pretty things

Such as jewelry like diamond rings

Its strength, hardness, and color,

are perfect for gem settings like no other!

Jaime L. Primm  
Tennessee

## **MY MOST USEFUL MINERAL**

My most useful mineral is coal. Coal is used for many things. It is one of humankind's primary energy sources. Some of the by-products of coal are cosmetics, medicines, chewing gum, and rubber tires.

Coal is a natural, dark brown to black, carbon containing material formed from fossilized plants. For coal to form it has to be pressed and heated for long periods of time.

As an energy source coal is used in power plants and to make steel. When burned, coal generates energy in the form of heat. This heat converts water into steam, which is used to spin a rotating shaft. This rotating shaft drives a generator that converts the mechanical energy of a turbine into electric power.

Coal is used in many things that you would find around the house, such as your favorite shade of lipstick to your tickle me pink blush. So every time you freshen your make-up before you head out, just think you're rubbing on some old rotten fossilized plants.

Not only does coal power cities and heat homes, it also helps cure many people every day. It is also used in chewing gum, so you're really chewing on some old dino dung soaked plants. But more on the serious side you ride on coal every time you go to a ballgame or cheerleading practice on your coal made tires.

Coal is a very important resource that is used whether you know it or not. So now you can appreciate some of the many uses of the black gold we know as COAL.

Jessica A. Rickard  
West Virginia

## **“My Most Useful Mineral!”**

### **Beryl**

I was born in Colorado  
Where I became a desperado  
I was made of all the best stuff for sure  
Oxygen, beryllium, and alumir.

Later I was so excited I couldn't sit  
I was used to make x-ray tubes, missiles, and rockets  
After all my adventures of life  
I settled down and got a wife.

We had two kids, they were a mess  
I wanted them to be like dad and colorless  
I'm sure you've heard of them  
They are both gems.

Their names are peachy keen  
Emerald and Aquamarine  
I guess I should be proud  
They're not criminals or loud.

I guess I should be happy  
I have a mommy and a pappy  
Being a mineral was my fate  
And I think it was pretty great.

Rebecca Ritter  
Pennsylvania

Hi, my name is Cariah Coal  
I'm formed from vegetation  
I'm not as pretty as silver or gold  
but I still command adulation.

The other minerals can't hold a candle to me  
no matter how hard they try  
I'm more useful than they, you see  
and that's what makes them cry.

I'm used in your aspirin and pantyhose  
I toast your toes at night  
I'm used to dye your fabulous clothes  
to make you look just right.

In the summer I cool you down;  
I'm in your nylon swimsuit.  
My use in plastic brought me renown,  
I give miners jobs, to boot.

I'm the biggest energy source;  
burned in power plants.  
Used in arts and crafts and more,  
I'm found underground like ants.

The Industrial Revolution was powered by me!  
More energetic than charcoal or wood,  
I provide your vital electricity!  
(without which this world would be no good).

When you pull on rubber gloves like fops  
(for your delicate hands),  
and gently fertilize your crops,  
I've twice fulfilled your demands.

Can't you see? Can't you see?  
Surely by now you must know,  
after hearing my litany.  
I'm simply the best way to go!

Parvi Saxena  
Tennessee

## **Copper and Its Uses with Locomotives**

Copper is helping the railroads gain market share from long-haul truckers. More than eight tons of copper in each of the latest, most-powerful locomotives enables them to pull longer trains faster up steeper grades.

The latest advance in this use of copper is the substitution of AC-induction drive motors for DC drive motors. To gain higher efficiency and tractive effort, fabricated copper conductor bars are specified for the rotors of these three-phase motors instead of aluminum. The rotors of the vast majority of induction motors for all uses are made by die casting aluminum. The stationary part of all motors are wound with copper wire.

These technically advanced locomotives are also more reliable, more efficient and more resistant to environmental extremes than the prior generation of locomotives with DC drive motors. America's two manufacturers of locomotives, General Electric and General Motors, developed AC-induction drive motors several years ago. Today, this technology is enabling them to introduce units with six drive motors that will generate 6,000 or more horsepower, 50% more powerful than prior models with DC drive motors. GE still offers smaller locomotives with DC propulsion systems.

Who would have ever thought copper could be so useful in a locomotive. Locomotives are a major source of transportation in our society. Copper is being produced as I speak right here in our copper mining town of Bagdad. Copper is my most useful mineral.

Robert Seevers  
Arizona

# Vermiculite

## The Multi-Purpose MINERAL

The mineral I chose is vermiculite,  
When you pick it up it's very light.  
It is used at many local florists,  
They add it to soil because it's porous.

You would be much the wiser,  
To know it absorbs fertilizer.  
And it is a lot like a  
Smaller piece of mica.

Potting and conditioning soil, the list goes on.  
It consists of the element aluminum, iron,  
magnesium, oxygen, and silicon.  
Insulation, soundproofing are some of the uses,  
Just look at all the things vermiculite produces.

It comes in small-foliated scales,  
When heat expands vermiculite, it acts as a seal.  
It's mostly found in the USA  
If I were you I would purchase some today!

Danica M. Sheth  
Pennsylvania

# GOLD

The most useful mineral to me is gold. It is a precious metal throughout the history of mankind. This is due to its resistance, beauty, rareness, and the fact that it is very easy to work with. In addition, in the olden days gold didn't have to be extracted because a large amount was found in a pure state. Many gold ornaments from the past have been found mainly from the tombs of the Pharaoh in Egypt. So it is very obvious that it has been used in history.

Gold is one of the heaviest minerals and can be panned very easily because the gold sinks to the bottom. It is the most malleable and ductile substance known. It can be flattened out and stretched very easily. You don't have to worry about gold tarnishing, discoloring, crumbling, or being affected by chemicals and solvents. This is why gold is most popular with wedding rings because people have to wear them so long.

I picked gold as my mineral because my father used to work at a gold mine. I went on a tour one time and learned how it was mined, extracted, and turned into gold bricks. It is most useful with jewelry and decorative reasons. It is used in statues, vases, dishes, and many other household items. It's most useful for jewelry where you will see gold earrings, necklaces, bracelets, rings, and more. This is why it is my most useful mineral.

Joseph Tarango  
Arizona

## **My Most Useful Mineral is Gold**

Gold is part of our everyday life. Gold is found in electronic equipment, home appliances, medical equipment, jewelry, money, artwork and even the clothes we wear.

Gold improves the quality of stereo sound by improving the cable connection between audio components. Gold reduces energy consumption in home appliances by allowing the appliance to operate at reduced voltages. Gold improves the quality of life through medical research and equipment.

Gold appeals to our personal self-esteem. We wear gold jewelry. We incorporate gold into our artwork. We decorate our homes with gold. Some of us even wear gold in and on our teeth.

We use gold in the form of coins as a monetary exchange. We buy and sell gold in the market. We use gold as a standard. Gold has even become a hobby for specialty coin collectors.

We use gold as a means to express our feelings for others when we exchange wedding rings. Employers use gold in the form of watches and rings to recognize years of service. We use gold in trophies and awards to recognize superior performance.

Gold is used to adorn the cars we drive, the dinnerware from which we eat, and the musical instruments we play. Gold is woven into our very existence.

From medical research to luxury, it is difficult to escape the use of gold in our lives. For most of us, gold has provided significant improvement in the way we live our lives.

Ricky Taylor  
Tennessee

## **The Most Useful Mineral**

Did you know that a sapphire gemstone is a mineral? The mineral class it is in is corundum. People use it for money, necklaces, rings, crowns and houses. The colors are blue, yellow, green, white, colorless, pink, orange, brown, and purple. Mostly rich people have gemstones. Did you know sapphire is not shaped like a diamond? It is shaped like a square rectangle or spiked-shaped. You can find sapphires in caves or water caverns, sometimes on ground. Sometimes they break it and shape it into a diamond. That's why we have crowns, necklaces, and rings. Scientists are looking for different minerals all over. Minerals are in your house all over. I am naming some minerals in your house: sink, bricks, toilets, clay, pipes, chalk, pieces of iron.

Mario Trejo  
Utah