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# ROCK MAGNET

news!

For Rockhounds Juniors, Teens & Greyhounds!

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## Birthstones, Yea or Nay! You can always choose one you like better!



Fiery Red **ALMANDINE GARNET** represents the month of January. The term Garnet is actually a group of stones that have slight variations of chemistry, some of the variations are called: andradite, grossular, pyrope, spessertine, dematoid, and uvarovite. It is known that garnet comes in every color but blue, however, red remains the favorite. Garnets are found in mica schist, a metamorphic rock that has undergone change by considerable heat and pressure. Granite pegmatites are sometimes a source for this gemstone. With a hardness of 7 to 7.5 the garnet can take a lot of bumps and scrapes, but its brittleness may cause it to chip. Garnets belong to the isometric (cubic) crystal system. Almandine's composition is Iron aluminum silicate. Commercially this garnet is broken into micro pieces and glued to heavy paper to be used for smoothing wood and metal.



**AMETHYST**, a deep purple quartz, is the gemstone for February! With the hardness of 7, belonging to the trigonal crystal system its luster is (glass-like) vitreous. Amethyst is dichroic (meaning two colors) changing from a bluish tinge to a reddish purple depending upon the angle when viewed. Amethyst is usually found in geodes; Brazil and Uruguay being some of the very best occurrences. The largest crystals originate from fluids associated with intrusive magmatic (crystallization from magma) phenomena and are found in pegmatitic and hydrothermal deposits. To be crystallized in a geode quartz, silicon dioxide, is in solution, that super saturated fluid makes its way into a hollow vug, the amethyst crystals grow in the available space.



The birthstone for March is a beryl, not just a common beryl, but the variety - **AQUAMARINE**. Aquamarine is a silicate of beryllium and aluminum that crystallizes in the Hexagonal Crystal System. The best crystals are clear (gemmy) sky blue to dark blue and fracture free. Most aquamarines form in pegmatites but they can be found in hydrothermal deposits. Aquamarine makes a good stone for jewelry because it is very hard a 7.5 - 8, but be careful it is brittle gemstone. Aquamarine is dichroic appearing blue or colorless as the stone is seen from different angles. The very best gem material comes from pegmatites in Brazil, Afghanistan, Pakistan, and Madagascar. This exceptional gemstone has vitreous luster.



April has the hardest (# 10) mineral on Earth for its gemstone, the **DIAMOND**. This gem is almost pure carbon sometimes it has inclusions, graphite, being one of them. Diamond crystallizes in the Isometric (Cubic) Crystal System; its luster is called adamantine. Diamonds are created deep in the Earth as much as 100 miles deep and into the mantle under extreme heat & pressure. Explosive volcanic pipes bring diamonds to the surface. Strange but true diamonds are not stable in our atmosphere, they will revert to carbon in a very long time so don't worry. Diamonds are found in several in colors (in addition to colorless) they can be: yellow, blue, red, brown, pink and green. The countries mining most of the World's diamonds are: South Africa, Asia & South America. Non-gemmy diamonds are used as an industrial abrasives.



This electric green belongs to **EMERALD**, a precious beryl and the gemstone for May. Emerald gets its color from chromium. This stone is found in granites, pegmatites and schists. It too like all other beryls is Beryllium aluminum silicate with a hardness of 7.5. and belongs to the Hexagonal Crystal System. The very best material comes from Colombia, South America. Emeralds are rarely flawless, sometimes they are oiled to hide the cracks and uneven color. So if the Emerald is your birthstone have an expert help you pick out the best stone.



June not unlike most months it has alternative stones. If you prefer Pearls, that is June too. On most lists we find the delicate **MOONSTONE** the birthstone for the 6th month. Moonstone is a feldspar, but not only one feldspar as the beautiful adularescence (a slight turbidity with a mobile reflection), can be seen in adularia, albite, oligoclase and microcline. This is a delicate looking stone; it looks like moonlight through fog. The moonstone with blue reflection is highly prized. This stone is finished as a cabochon as the beautiful adularescence would not be seen if this stone were to be faceted.



July's birthstone is the **ROBY**. This fiery gemstone is red corundum which has the hardness of 9. The ruby is pleochroic depending on the view, sometimes an intense carmine to a brick red. The ultra-violet rays of direct sun light will cause the ruby to fluoresce. Sometimes the stone is included with minute rutile needles which produce a silky sheen; when these needles line up they create a star ruby. The highest quality ruby can be as valuable as diamonds.



**PERIDOT** is the gem name for olivine, a silicate of magnesium and iron, the first mineral to crystallize from a basaltic magma melt. Its crystal system is orthorhombic, with a hardness of 6.5 - 7.0, colored by iron this gemstone was known by the ancients as topazos from the Island of Tapazos, an island in the Red sea. This birthstone of August has color that varies from yellowish green to almost a bottle green or a pale-yellow tinged with green. In the gem trade the greener stones are called peridot the yellower type chrysolite.



Like the inky dark blue of a cold Adirondack lake the **SAPPHIRE** of September is cool, calm and mysterious for it too is a corundum with the hardness of nine. Sapphires are colored by iron and titanium. Corundum gems are aluminum oxide crystallizing in a trigonal crystal system; both the ruby and sapphire varieties of corundum are found in basaltic rocks. There is a wide variety of blues for this gemstone in some cases it is heat treated to improve its color. When rutile needle inclusions lie parallel to the three horizontal crystal directions it creates a "star effect" giving you what is known as a star sapphire.



**OPAL** is for October. Opal is noncrystalline form of silica, a mineraloid, with the same composition as quartz,  $\text{SiO}_2$ . This gemstone can contain up to 2% water. It is deposited at a relatively low temperature and may occur in the fissures of almost any kind of rock. Opal's internal structure of tiny spheres makes it diffract light. This is called opalescence. Opal has a wide range of color and varies from opaque to semi-transparent. Opal has a hardness of 5.5 to 6.5. There is common and precious opal, precious determined by the fire of its iridescence. Black precious opal is the most highly prized of the opals and is mined in Australia.



The birthstone for November is **TOPAZ** a silicate mineral of aluminum and fluorine. Topaz crystallizes in the orthorhombic system and its crystals are mostly prismatic, meaning they are usually long like a column but full not slender. Looking carefully you can see striations. Pure topaz is colorless and transparent but it is usually tinted by impurities; typical topaz is yellow, reddish-orange, or blue brown. Orange topaz, also known as precious topaz, is the symbol of friendship, and the state gemstone for the US state of Utah. Topaz has the hardness of eight and usually found in pegmatite deposits.



**Turquoise** is an opaque, blue-to-green mineral that is a phosphate of copper and aluminum. December's birthstone is rare and valuable in finer grades and has been prized as a gemstone for thousands of years owing to its unique color. Even the finest of turquoise is fracturable, with a maximum hardness of just under 6, or slightly more than window glass. Characteristically a cryptocrystalline mineral, turquoise seldom forms single crystals. Its crystal system is triclinic with a lustre waxy to subvitreous, its fracture is conchoidal. Turquoise may be peppered with flecks of pyrite or interspersed with dark, spidery limonite veining.

Name

Date

January


February

James Dwight Dana    February 12, 1813    Am.Mineralogist

March


April

Leonardo di Vinci    April 15, 1452    Theory of Mountain Building

May


June

James Hutton    June 3, 1726    Father of Modern Geology

# My Birthstone List - Family, Friends & Important Rockhounds

Name

Date

**July**


**August**


**September**


October

John Tuzo Wilson	October 24, 1908      Theory of Plate Tectonics

**November**


**December**
