**This Planet Really Rocks!**

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| http://library.thinkquest.org/J002289/images/rock.gif | **What is a Rock?** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**Rocks found on the moon have some of the same compositions as rocks found on earth.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif****http://library.thinkquest.org/J002289/images/boy.gifCan you guess? What is something that you see everyday...no matter where you go or where you look? They might be little or big. You might even see them around the neck of a little kid. You guessed right! ROCKS!** **Rocks are everywhere. They have been on the earth over four billion years. http://library.thinkquest.org/J002289/images/stega.gifThe rock you see might have once been part of a magnificent mountain or spectacular cave. It could have even been stomped by a dinosaur. Rocks are a fascinating way to discover information about the history of the earth.** **Most rocks are made of** [**minerals**](http://library.thinkquest.org/J002289/glossary.html#mineral)**. However, all rocks are not the same. That is why rock collecting is so interesting and fun. Every rock has its own story.** **Rocks can be put into three basic rock types:** [**igneous**](http://library.thinkquest.org/J002289/glossary.html#igneous)**,** [**sedimentary**](http://library.thinkquest.org/J002289/glossary.html#sedimentary)**, and** [**metamorphic**](http://library.thinkquest.org/J002289/glossary.html#metamorphic)**. How a rock is formed determines which group it is placed in.** **To learn more about rocks and minerals, click on next below:**  |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Igneous Rocks** |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Sedimentary Rocks** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**Seventy percent of all the rocks on earth are sedimentary rocks.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif****The earth's surface is constantly being eroded. This means that rocks are broken up into smaller pieces by** [**weathering**](http://library.thinkquest.org/J002289/glossary.html#weathering) **agents such as wind, water, and ice. These small pieces of rock turn into pebbles, gravel, sand, and clay. They tumble down rivers and streams. These pieces settle in a new place and begin to pile up and the** [**sediments**](http://library.thinkquest.org/J002289/glossary.html#sediments) **form flat layers. Over a long period of time, the pieces become pressed together and form solid rock called http://library.thinkquest.org/J002289/images/sed.gif**[**sedimentary**](http://library.thinkquest.org/J002289/glossary.html#sedimentary) **rock. Most sedimentary rocks form under water. Most of the earth has been covered by water some time in the past. 70% of the earth is covered by water now. So sedimentary rocks are common all over the world. Sedimentary rocks are often rich in** [**fossils**](http://library.thinkquest.org/J002289/glossary.html#fossils)**.** **Sediments can harden into sedimentary rock in two ways.** **http://library.thinkquest.org/J002289/images/bullet2.gifpressure-As layer after layer of sediments are deposited, the lower layers are pressed together tightly under the weight of the layers above. http://library.thinkquest.org/J002289/images/bullet2.gifcementing-Some sediments are glued together by minerals dissolved in water.** **Some examples of sedimentary rocks are sandstone, limestone, conglomerate, and shale. Sandstone is formed from grains of sand pressed tightly together. Sandstones are very common rocks. They are formed from the sand on beaches, http://library.thinkquest.org/J002289/images/fossil.gifin riverbeds, and sand dunes. Sandstones are usually made of the mineral quartz. Limestone is formed from tiny pieces of shells of dead sea animals that have been cemented together. Conglomerate contains sand and rounded pebbles that have also been cemented together. Shale is formed from mud or clay that has been pressed together. Shale forms in quiet waters such as swamps and bogs. Sedimentary rocks are easy to identify because you can actually see the layers.** **Below is a summary of the major characteristics of sedimentary rocks.** **http://library.thinkquest.org/J002289/images/bullet2.gifClassified by texture and composition http://library.thinkquest.org/J002289/images/bullet2.gifOften contains** [**fossils**](http://library.thinkquest.org/J002289/glossary.html#fossils) **http://library.thinkquest.org/J002289/images/bullet2.gifMay react with acid http://library.thinkquest.org/J002289/images/bullet2.gifOften has layers, flat or curvedhttp://library.thinkquest.org/J002289/images/bullet2.gifUsually composed of pieces cemented or pressed together http://library.thinkquest.org/J002289/images/bullet2.gifHas great color variety http://library.thinkquest.org/J002289/images/bullet2.gifParticle size may be the same or vary http://library.thinkquest.org/J002289/images/bullet2.gifUsually has pores between pieces http://library.thinkquest.org/J002289/images/bullet2.gifMay have cross-bedding, mud cracks, worm burrows, raindrop impressions** **Here's a checklist of some common sedimentary rocks and their characteristics. Look for these same characteristics in the rocks you find, and you'll be well on your way to becoming a *rockhound*.**

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| **Some Common Sedimentary Rocks**  |
| **Name**  | **Image**  | **Color**  | **Composition**  |
| **Sandstone**  | http://library.thinkquest.org/J002289/images/sandstone.jpg | **Red or Gray** | **Sand grains cemented together** |
| **Limestone** | http://library.thinkquest.org/J002289/images/limestone.jpg | **White to Gray**  | **Calcite and sometimes fossils**  |
| **Shale** | http://library.thinkquest.org/J002289/images/shale.jpg | **Dark Gray**  | **Compacted mud**  |
| **Conglomerate**  | http://library.thinkquest.org/J002289/images/conglomerate.jpg | **Different Colors**  | **Rounded cobbles and pebbles cemented together**  |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Metamorphic Rocks** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**The oldest known rock lies in Canada. The Acasta gneiss, a metamorphic rock, is 3.96 billion years old.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif****http://library.thinkquest.org/J002289/images/meta.gifHeat and pressure can change many things. They can even change rocks. The name for rocks that has been changed is metamorphic (met uh MOR fik) rocks. Metamorphic comes from Greek words meaning "change" and "form".** **Metamorphic rocks form deep in the earth where high temperature, http://library.thinkquest.org/J002289/images/heat.gifgreat pressure, and chemical reactions cause one type of rock to change into another type of rock. Metamorphic rocks begin to form at 12-16 kilometers beneath the earth's surface. They begin changing at temperatures of 100 degrees Celsius to 800 degrees Celsius. http://library.thinkquest.org/J002289/images/time.gifIf you squeeze and heat a rock for a few million years, it can turn into a new kind of rock.** **Where does the heat come from? The heat comes from** [**magma**](http://library.thinkquest.org/J002289/glossary.html#magma)**. Where does the pressure come from? http://library.thinkquest.org/J002289/images/press.gifThe pressure comes from layers of rock piled on top of layers and layers of rock. The layers on the bottom get squeezed. The thicker the layers, the more pressure there is.** **Some examples of how metamorphic rocks were changed:** **http://library.thinkquest.org/J002289/images/change.gif****Below is a summary of the major characteristics of metamorphic rocks.** **http://library.thinkquest.org/J002289/images/bullet2.gifClassified by texture and composition http://library.thinkquest.org/J002289/images/bullet2.gifRarely has** [**fossils**](http://library.thinkquest.org/J002289/glossary.html#fossils) **http://library.thinkquest.org/J002289/images/bullet2.gifMay react with acid http://library.thinkquest.org/J002289/images/bullet2.gifMay have alternate bands of light and dark minerals http://library.thinkquest.org/J002289/images/bullet2.gifMay be composed of only one** [**mineral**](http://library.thinkquest.org/J002289/glossary.html#mineral)**, ex. marble & quartzite http://library.thinkquest.org/J002289/images/bullet2.gifMay have layers of visible** [**crystals**](http://library.thinkquest.org/J002289/glossary.html#crystal) **http://library.thinkquest.org/J002289/images/bullet2.gifUsually made of mineral** [**crystals**](http://library.thinkquest.org/J002289/glossary.html#crystal) **of different sizes http://library.thinkquest.org/J002289/images/bullet2.gifRarely has pores or openings http://library.thinkquest.org/J002289/images/bullet2.gifMay have bent or curved** [**foliation**](http://library.thinkquest.org/J002289/glossary.html#foliation)**Here's a checklist of some common metamorphic rocks and their characteristics. Look for these same characteristics in the rocks you find, and you'll be well on your way to becoming a *rockhound*.**

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| **Some Common Metamorphic Rocks**  |
| **Name**  | **Image**  | **Color**  | **Texture**  |
| **Gneiss**  | http://library.thinkquest.org/J002289/images/gneiss.jpg | **Pink/Gray**  | **Foliated** |
| **Marble** | http://library.thinkquest.org/J002289/images/marble.jpg | **Light Colored**  | **Unfoliated**  |
| **Quartzite** | http://library.thinkquest.org/J002289/images/quartzite.jpg | **Light Colored**  | **Unfoliated**  |
| **Slate**  | http://library.thinkquest.org/J002289/images/slate.jpg | **Dark Gray to Black**  | **Foliated**  |

**To learn more about rocks and minerals, click next below:**  |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Rock Cycle** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**Up to 100,000 tons of rock a year fall to earth from space. The largest meteorite in the world lies in the ground in Africa and weighs more than 60 tons.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif**[**http://library.thinkquest.org/J002289/images/cycle.gif**](http://library.thinkquest.org/J002289/images/cycle.gif)**Did you know that rocks are constantly being recycled? Recycle means to take something old and change into something new. So some of these old rocks that have been around for more than four billion years are being changed into different rocks. Of course, that doesn't happen over night. It takes millions of years. To better understand how this happens, let's take a journey through the** [**rock cycle**](http://library.thinkquest.org/J002289/glossary.html#rockcycle)**.** **http://library.thinkquest.org/J002289/images/mantle.gifFirst, our journey begins in the** [**mantle**](http://library.thinkquest.org/J002289/glossary.html#mantle)**. Here we see some red hot** [**magma**](http://library.thinkquest.org/J002289/glossary.html#magma) **that is being pushed up towards the** [**crust**](http://library.thinkquest.org/J002289/glossary.html#crust)**. Some of this magma creeps into the cracks of the** [**volcano**](http://library.thinkquest.org/J002289/glossary.html#volcano)**; while, the rest is forced out of the top of the volcano. Once the magma is out of the volcano, it is called** [**lava**](http://library.thinkquest.org/J002289/glossary.html#lava)**. The lava cools and forms** [**igneous**](http://library.thinkquest.org/J002289/glossary.html#igneous) **rocks. http://library.thinkquest.org/J002289/images/volcano.gif****Then some of the igneous rocks roll down the mountains formed by the volcanoes and eventually end up in the ocean. As they roll, bits and pieces of the igneous rocks are broken and form** [**sediments**](http://library.thinkquest.org/J002289/glossary.html#sediments)**. Layer after layer of sediments are pressed and cemented together forming** [**sedimentary rocks**](http://library.thinkquest.org/J002289/glossary.html#sedimentary)**.** **Some of the sedimentary rocks on the very bottom get hot because of the pressure and change to** [**metamorphic rock**](http://library.thinkquest.org/J002289/glossary.html#metamorphic)**. When the metamorphic rock is buried deeper, it gets hotter and melts. Once again, it becomes magma and may eventually be pushed up and out of a volcano.** ***The rock cycle begins all over again!*** |

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| http://library.thinkquest.org/J002289/images/rock.gif | **What is a Mineral?** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**The elements oxygen, silicon, aluminum, iron, magnesium, calcium, potassium, and sodium make up 99 percent of all minerals on Earth.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif****http://library.thinkquest.org/J002289/images/crystal2.gifDo you know the difference between a rock and a mineral? Minerals are the building blocks of rocks. Here are some of the basic characteristics of minerals to help you understand what they are:** **http://library.thinkquest.org/J002289/images/bullet2.gifMinerals are inorganic; they are not alive and they are not plants or animals. An example of a rock that is not a mineral is coal. Coal is a substance formed from decayed plants and animals. Therefore, coal is not considered a mineral. http://library.thinkquest.org/J002289/images/bullet2.gifMinerals are found in the earth or are naturally occurring substances. They are found in** [**dirt**](http://library.thinkquest.org/J002289/glossary.html#dirt)**, rocks, and water. They are not made by man. http://library.thinkquest.org/J002289/images/bullet2.gifMinerals are chemical substances. Some minerals like gold or silver are made of only one** [**element**](http://library.thinkquest.org/J002289/glossary.html#element)**. Other minerals, like quartz and calcite, are combinations of two or more elements. http://library.thinkquest.org/J002289/images/bullet2.gifMinerals always have the same chemical makeup. For example, quartz will always consist of one part silicon (an element) two parts oxygen (another element). http://library.thinkquest.org/J002289/images/bullet2.gifMinerals are usually solid** [**crystals**](http://library.thinkquest.org/J002289/glossary.html#crystal)**. They have a number of flat surfaces in an orderly arrangement. http://library.thinkquest.org/J002289/images/crystal.gifFor example, a crystal of quartz is always hexagonal because of the way the atoms of silicon and oxygen join together.** **About 2,000 minerals have been found. Oxygen is part of many minerals. Minerals containing oxygen make up almost half of the earth's** [**crust**](http://library.thinkquest.org/J002289/glossary.html#crust)**. Quartz is a common mineral. Other common minerals are feldspar, mica, and horneblend. Many rocks are made of these common minerals.** **http://library.thinkquest.org/J002289/images/ring.gifSome minerals are rare and expensive. They are called** [**gems**](http://library.thinkquest.org/J002289/glossary.html#gems) **. Diamonds, rubies, and emeralds are good examples of such minerals. Gold and silver are also minerals. Together, these natural substances are used to make beautiful jewelry.** **To learn more about rocks and minerals, click on next below.**  |

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| http://library.thinkquest.org/J002289/images/rock.gif | **How are Minerals Identified?** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**The largest topaz crystal was found in Brazil in 1940. It weighs 596 pounds. It is on display in the American Museum of Natural History in New York.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif****You are probably wondering how scientists have identified over 2,000 minerals. Well, minerals have certain properties, or characteristics, that help to identify them. Minerals can be identified by their** [**color**](http://library.thinkquest.org/J002289/ident.html#color)**,** [**luster**](http://library.thinkquest.org/J002289/ident.html#luster)**,** [**streak**](http://library.thinkquest.org/J002289/ident.html#streak)**,** [**cleavage**](http://library.thinkquest.org/J002289/ident.html#cleavage)**,** [**hardness**](http://library.thinkquest.org/J002289/ident.html#hardness)**,** [**specific gravity**](http://library.thinkquest.org/J002289/ident.html#specific%20gravity)**, and even by their chemical composition. Below you will find a table of some of these properties. Also, included are some examples of minerals that help explain these properties. There are also links to webpages that have additional information about each of the properties described below. Hopefully, this information will help you to become a good mineral detective. *GOOD LUCK*!**

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| **Color** |
| [**Color**](http://www.minerals.net/resource/property/color.htm) **is not always a good clue to the identity of a mineral. Many minerals are found in several colors and many minerals have extra chemicals in them that give them an unexpected color. Also,** [**weathering**](http://library.thinkquest.org/J002289/glossary.html#weathering) **may change the color of the mineral.**  | **Example-quartz comes in various colors: rose, milky, clear**  |
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| **Luster** |
| [**Luster**](http://www.minerals.net/resource/property/luster.htm) **is the way a mineral reflects light. Minerals can be described as metallic, pearly, glassy, silky, greasy, brillant, or dull.**  | **For example, diamonds are brillant. Talc has a greasy luster, quartz has a glassy luster, and gypsum has a pearly luster. Pyrite or fool's gold, as it is sometimes called, has a metallic luster.**  |
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| **Streak** |
| **This is the color of the** [**streak**](http://www.minerals.net/resource/property/streak.htm) **made by rubbing a mineral across a hard, rough surface like a bathroom tile.**  | **An example is pyrite which is a brassy, yellow color. However, it makes a greenish, black streak when rubbed across a rough surface. You will need a field guide to rocks and minerals to tell you what color streak a mineral makes.**  |
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| **Cleavage** |
| [**Cleavage**](http://www.minerals.net/resource/property/cleavage.htm) **is when certain minerals break in a definite way.**  | **For example, galena cleaves into little cubes. Mica cleaves into thin sheets. Calcite cleaves into slanting bricks. Feldspar breaks into little steps. Quartz cleaves into irregular chunks.**  |
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| **Hardness** |
| [**Hardness**](http://www.minerals.net/resource/property/hardness.htm) **is measured by seeing how easy it is to scratch a mineral.**  | **For example, talc, the softest mineral known, can be scratched with a fingernail. Diamond, the hardest mineral, can scratch all the other minerals but cannot be scratched by them. A German** [**mineralogist**](http://library.thinkquest.org/J002289/glossary.html#mineralogist)**, Friedrich Mohs, developed a standard** [**scale of hardness**](http://library.thinkquest.org/J002289/mohs.html) **in 1822. His scale is so easy to use that it is still in use today.**  |
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| **Specific Gravity** |
| [**Specific gravity**](http://www.minerals.net/resource/property/sg.htm) **of a mineral is its relative weight compared to the weight of an equal volume of water. It determines the** [**density**](http://library.thinkquest.org/J002289/glossary.html#density) **of the mineral.**  | **Two minerals may be the same size, but their weight may be very different. Water has a specific gravity of 1. If a mineral has a specific gravity less than 3, it is considered a "light" mineral, between 3 and 5 - "average", and more than 5 - "heavy". Minerals with a metallic luster are usually "heavy".**  |

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| Moh's Hardness Scale |
| Hardness | Mineral | Description |
| **1** | **Talc** | **Fingernail scratches it easily.** |
| **2** | **Gypsum** | **Fingernail scratches it.** |
| **3** | **Calcite** | **Copper penny scratches it.** |
| **4** | **Fluorite** | **Steel knife scratches it easily.** |
| **5** | **Apatite** | **Steel knife scratches it.** |
| **6** | **Feldspar** | **Steel knife does not scratch it easily, but scratches glass.** |
| **7** | **Quartz** | **Hardest common mineral. It scratches steel and glass easily.** |
| **8** | **Topaz** | **Harder than any common mineral.** |
| **9** | **Corundum** | **It scratches Topaz.** |
| **10** | **Diamond** | **It is the hardest of all minerals.** |

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| **Some Common Minerals and Their Properties**  |
| **Name**  | **Color**  | **Streak**  | **Luster**  | **Hardness** | **Other Properties**  |
| **Graphite** | **Black** | **Black** | **Metallic** | **1** | **Crystals are rare.** |
| **Mica** | **Colorless** | **White** | **Pearly** | **2.5-3** | **Flakes into sheets** |
| **Halite** | **Colorless** | **White** | **Glassy** | **2.5** | **Salty taste** |
| **Galena** | **Gray** | **Gray** | **Metallic** | **2.5-3** | **Crystal Cubes** |
| **Calcite** | **Colorless** | **White** | **Glassy** | **3** | **Crystalline** |
| **Magnetite** | **Black** | **Black** | **Dull** | **5.5-6.5** | **Magnetic** |
| **Pyrite** | **Golden** | **Black** | **Metallic** | **6-6.5** | **Looks like gold** |
| **Feldspar** | **Various** | **White** | **Glassy** | **6-6.5** | **Two cleavages** |
| **Quartz** | **Various** | **White** | **Glassy** | **7** | **Round fracture** |
| **Corundum** | **Gray** | **White** | **Glassy** | **9** | **Crystalline** |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Uses of Rocks and Minerals** |

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| **Fascinating Fact**http://library.thinkquest.org/J002289/images/boy2.gif**The most common mineral on earth is quartz.**  |

**http://library.thinkquest.org/J002289/images/rockline.gif****Have you ever wondered what the world would be like without rocks? You may not know it, but if we took all the rocks away, we would have a miserable life. We use rocks for roads, metals, jewelry, tombstones, building materals, cosmetics, and many, many more things. Most of the famous sculptures of the world are made from blocks of stones such as granite and marble. Did you know that the Great Wall of China and the Taj Mahal are made out of rocks? We also collect rocks as a hobby. If we did not have rocks, this earth would be pretty empty. Who wants an empty earth? Not me!** **To better help you understand the importance of rocks, study the table below of some the most commonly used rocks and minerals.** **http://library.thinkquest.org/J002289/images/rockline.gif**

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| **The Importance of Rocks and Minerals** |
| **Name**  | **Type of Rock**  | **Use**  |
| [**Basalt**](http://library.thinkquest.org/J002289/images/basalt.jpg) | **Igneous**  | **Used in road building materials**  |
| [**Calcite**](http://library.thinkquest.org/J002289/images/calcite.gif)  | **Mineral**  | **Used in cements and mortars and the production of lime**  |
| [**Granite**](http://library.thinkquest.org/J002289/images/granite.jpg) | **Igneous**  | **Used for buildings, monuments, and tombstones**  |
| [**Marble**](http://library.thinkquest.org/J002289/images/marble.jpg)  | **Metamorphic**  | **Used in building, floors, tile in bathrooms**  |
| [**Obsidian**](http://library.thinkquest.org/J002289/images/obsidian.jpg) | **Igneous**  | **Used in making arrowheads and knives**  |
| [**Pumice**](http://library.thinkquest.org/J002289/images/pumice.jpg) | **Igneous**  | **Used in scouring, scrubbing, and polishing materials**  |
| [**Quartz**](http://library.thinkquest.org/J002289/images/quartz.jpg) | **Mineral**  | **Used in making glass, electrical components, and optical lenses**  |
| [**Sandstone**](http://library.thinkquest.org/J002289/images/sandstone.jpg)  | **Sedimentary**  | **Used in the building industry for houses**  |
| [**Slate**](http://library.thinkquest.org/J002289/images/slate.jpg) | **Metamorphic**  | **Used for roofs, chalkboards, and patio walks**  |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Rock Jokes** |

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| http://library.thinkquest.org/J002289/images/rockline.gif**Now for some fun! Here are some rock "puns" written by our very own Thinkquest Team. We would like for you to share your "rock jokes" with us and we will post them with your name, age, and location on this page. So get busy and** **email** **us your jokes. Have Fun!** 1. **What does a rock want to be when it grows up?**
2. **What do you call a dog who collects rocks?**
3. **What do you do to a baby rock?**
4. **What is a rock's favorite kind of music?**
5. **Where do rocks sleep?**
6. **How do rocks wash their clothes?**
7. **What is a rock's favorite transportation?**
8. **What is a rock's favorite cereal?**
9. **Where is a rock's favorite golf course?**
10. **What is a rock's favorite television show?**

**http://library.thinkquest.org/J002289/images/rockline.gif****Answers**1. **A Rock Star**
2. **A Rockhound**
3. **Rock it**
4. **Rock 'N Roll**
5. **Bedrock**
6. **On the rock cycle**
7. **A rocket**
8. **Cocoa Pebbles**
9. **Pebble Beach**
10. **"Third Rock from the Sun"**

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| http://library.thinkquest.org/J002289/images/pick.gif | **Ryan's Rockhounding Story** |

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| http://library.thinkquest.org/J002289/images/rockline.gif[**http://library.thinkquest.org/J002289/images/ryan.jpg**](http://library.thinkquest.org/J002289/images/ryan.jpg)http://library.thinkquest.org/J002289/images/rockborder.gif**Hi! My name is Ryan and I am eleven years old. I am in the sixth grade at Vidor Middle School. I started rock collecting at the ripe *young* age of seven. My Grandma bought me a special crystal that set me on my rockhounding adventures. I have been to South Dakota, Oregon, and Arizona looking for rocks. My mom has even been to France and brought me back many rocks to add to my more than 200 rocks in my collection.** **I keep my rocks just about everywhere. I keep then in my room on shelves, in display cases, and even outside in my rock garden. The best thing about rock collecting is that it is a very good hobby. It doesn't turn you into a couch potato. Most importantly, it's fun! Some rocks are valuable and hard to find. That is why I think it will be a lifelong hobby for me.** [**http://library.thinkquest.org/J002289/images/tools.jpg**](http://library.thinkquest.org/J002289/images/tools.jpg)**Now if you want to look for rocks and minerals, you must have the right tools. If you don't already have some of these things around your house, you should be able to buy them at your local hardware store or from a rock and mineral dealer.**

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| **Rockhounding Tools**  |
| **Tool**  | **Description**  |
| **Rock Hammer**  | **Should have a square head and a pointed end for breaking off small rock specimens to bring home**  |
| **Chisel**  | **A good tool for helping to loosen and break off rock pieces**  |
| **Magnifying Glass** | **To help you take a closer look at the different mineral crystals and other structures in the rocks.**  |
| **Safety Goggles**  | **To protect your eyes from rock fragments that may fly up when you are loosening rock and mineral specimens**  |
| **Notebook and Pencil**  | **To jot down notes about the rock specimens that you are collecting - the date and place found**  |
| **Newspaper**  | **To wrap each specimen so that the rocks don't hit against each other and break** |
| **Bucket or Canvas Bag**  | **For carrying your rock and mineral specimens home in**  |

**Now that you have all the right tools to get started rock hunting, you are probably asking yourself "where should I look for specimens?" Look for areas where there is exposed rock. Along stream beds, hillside ledges, and road cuts are good places to begin your rockhounding adventures. If you know that you will be collecting on someone's private property, ask their permission first. ALWAYS take along a friend. Let your family know where you will be exploring. BE CAREFUL!** **http://library.thinkquest.org/J002289/images/rockline.gif** |

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| http://library.thinkquest.org/J002289/images/rock.gif | **Rock Sayings** |

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| http://library.thinkquest.org/J002289/images/rockline.gifhttp://library.thinkquest.org/J002289/images/boy2.gif**http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that the diamond is the hardest natural substance found on earth? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that quartz is one of the most common minerals on Earth? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that marble forms from metamorphosed carbonate rock, most usually limestone? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that basalt is the most common rock on Earth? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that breccia is a rock composed of generally large, sharp fragments cemented together? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know feldspars make up more than 50% of the Earth's crust? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know the first recorded use of turqouise dates back to 5000 BC in Mesopotamia, where people used the gemstone to make beads? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know lapis lazul is treasured for its rich blue color and is often used in jewelry? Did you also know that ancient Eqyptians used powdered lapis lazul as eye shadow? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know jade because of it's toughness has been used for many cultural things like hammers, fish hooks, and stone axes. http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that rubies are one of the most popular gemstones today. http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that the first geologist on the moon was Harrison Schmitt who was part of the Apollo 17 mission? From the rock samples he collected, scientists have been able to learn many things about the moon. http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that the Earth is approximately 4.8 billion years old? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that gold is so soft and easily worked that you could roll an ounce of it into a hair-thin wire 50 miles long? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that the biggest pure-gold nugget was found in Australia in 1869 and weighed 156 pounds? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that platinum is so rare that two million pounds of ore may contain only one pound of metal? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that geodes are dull balls of igneous or sedimentary rock on the outside, but contain beautiful crystals on the inside? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that meteorites, rocks from space, help scientists learn about the solar system and are very valuable, too? http://library.thinkquest.org/J002289/images/bullet2.gifDid you know that the Taj Mahal built between 1632 and 1654 in India is made entirely out of marble?**  |

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