

Rocks and Minerals

Properties and Uses

Ask:

How do you think early man may have used rocks? Answers may vary.

Proceed to slide 2.

Early Man

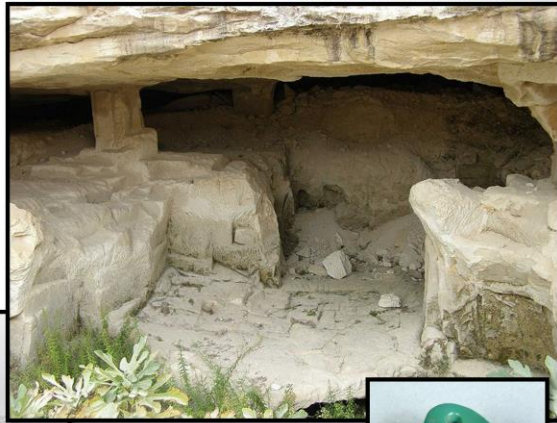


Photo Credit: NPS

Rocks and minerals were used by early man for weapons and tools (ax, mortar, and pestle), shelter, jewelry, fire pits (not pictured), etc. Scientists know that early man relied on rock caves and structures for shelter because they have found art (wall paintings), artifacts, and human remains in these places. This early period of human life has been named the Stone Age.

Granite



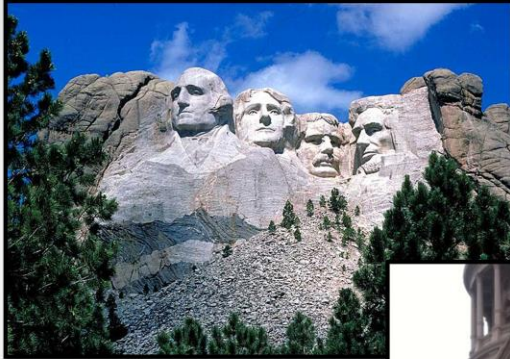
This rock may be a mix of gray, white, red, pink, or black minerals. It is very hard and does not wear down easily. It can be very beautiful when polished.

Refer back to the question and predictions in the Engage: **Based on its appearance and properties, what do you think the pinkish rock (granite) might be used for? Why?**

Proceed to slide 4 for uses.

Venegas, A. (Photographer) (2012). *Granite* [Print].

Granite – Uses



- monuments
- buildings
- countertops
- tombstones, etc.



Granite is used for things that we want to last a long time. Mount Rushmore National Memorial is carved into the granite face of Mount Rushmore in South Dakota. The exterior walls of the Texas State Capitol were constructed from “sunset red” granite quarried near Marble Falls. Granite is a popular countertop stone; it can withstand high temperatures and is beautiful when polished.

Obsidian



This rock is hard and glassy. Just like glass, it chips to form very sharp edges.



Native Americans used it for blades and arrowheads.

Ask: **What types of things need sharp edges to function?** Answers may vary.

On animation click, explain:

Native Americans used obsidian and another rock called flint to make blades, arrowheads, and weapons.

Venegas, A. (Photographer) (2012). *Obsidian* [Print].

USGS. (Photographer) (2012). *Arrowhead* [Print].

Pumice



This rock's rough texture makes it useful in many products.



Pumice is ground up and used in soaps and other things that polish your skin.

Ask: **What might pumice be used for?** Answers may vary.

On animation click, explain:

Pumice is a volcanic rock with a rough texture that makes it excellent for filing, scraping, or cleaning things. It is used in scouring powders and polishes and useful for removing calluses or rough skin. Pumice has so many air holes that it floats.

Venegas, A. (Photographer) (2012). *Pumice* [Print].

Limestone



This rock is often crushed and mixed with other materials. It is formed from shells and bones.



- cement
- train track beds
- fertilizer
- buildings

In past times, limestone was used extensively in construction of buildings. The Great Pyramid of Giza was built of huge slabs of limestone. The interior walls and foundation of the Texas State Capitol is mostly limestone quarried from present-day Oak Hill (SW Austin). Today, limestone is crushed and used in a multitude of products such as landscaping rock, roadbeds (for train tracks), fertilizer, cement, steel manufacturing, water treatment, etc.

Venegas, A. (Photographer) (2012). *Limestone* [Print].

Halite



This mineral can form from evaporated sea water. It dissolves in water and looks like clear or white cubes.



Salt seasons our food and melts ice on streets and sidewalks.

Ask: **Does this mineral remind you of anything you use everyday?** *Answers will vary.*

On animation click, explain:

This mineral is better known as salt. It is used to season our food, and rock salt helps to melt ice on streets and sidewalks.

Coal



This rock burns.
It is dark in
color, usually
black or brown.



Coal is burned to
produce energy
such as electricity.

Ask: **Do you know what this rock is used for?** Answers may vary.

On animation click, explain:

Coal is a rock in the Earth's crust that is used for fuel to run factories and make electricity for our homes. Fuel is any material which can be burned to produce energy. Coal, along with petroleum products like natural gas and oil, are mined from deep inside the Earth and provide fuel and other products (plastics, CD's/DVD's, medicine, etc.) that make our lives easier.

Venegas, A. (Photographer) (2012). *Coal* [Print].

Talc



This mineral is very soft and has a greasy or soapy feel. It ranges in color from white to gray, sometimes green.

Talc has many uses, but is best known for its use in talcum (baby) powder and cosmetics.



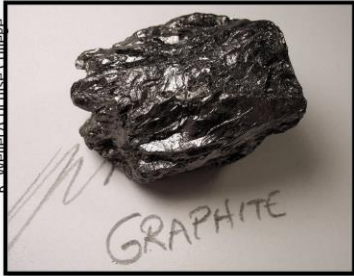
Ask: **What might talc be used for?** *Answers will vary.*

On animation click, explain:

Talc's properties make it useful in many things. It is used in baby powder and cosmetics and in sports to keep ones hands dry.

Venegas, A. (Photographer) (2012). *Talc* [Print].

Graphite



This mineral is very soft and will leave black smudges on your fingers if handled.

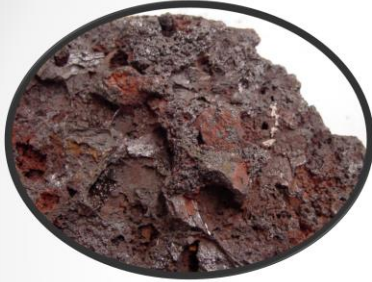


- pencil “lead”
- dry lubricant
- many other uses

Ask: **Can you tell from the picture how we use graphite in our daily lives?** *Answers will vary.*

On animation click, explain:
What we call pencil “lead” is really graphite.

Iron Ore



This rock contains a metal that attracts magnets. The metal must be separated from the rock before it can be used.



Most iron ore is used to make steel.

Students should remember that iron attracts magnets. One iron ore, found in magnetite, is a natural magnet. Most iron ore is used to make steel, which is one of the most widely used materials (alloys) in the world.

Marble

This rock is valued because of its beauty. It is strong, but can be carved and polished.

- monuments
- statues
- buildings
- floor tiles
- decoration



The Lincoln Memorial, as well as many other monuments, statues, and structures in Washington, D. C. (and throughout the World) are made from marble.

Diamond



This mineral is harder than any other mineral. When cut, it reflects light, causing it to sparkle.



- jewelry
- cutting tools

Diamonds are the hardest known natural material. This property makes them excellent for use in cutting tools. Diamonds and other gemstones are used to make things that we like to look at.

Native Copper



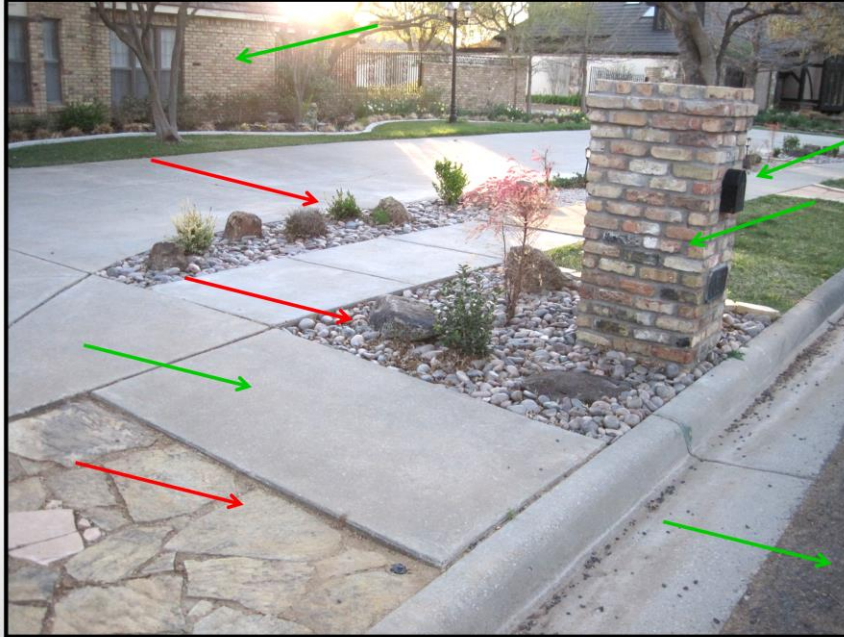
This rock contains a metal which can be easily shaped.

- coins
- wire
- pipe fittings



Copper was used in coins and ornaments by early cultures. Our pennies were mainly composed of copper prior to 1982. Today, it is used in wiring and plumbing extensively. It is also an essential component in automobiles. Copper is combined with zinc to make brass and with tin to make bronze.

Natural or Manufactured?



Optional Slide: Can students distinguish the natural rock in this photo from the products that have been manufactured from rock or minerals? River rock, flagstone, and landscaping rocks are natural. Some of the manufactured products include concrete, asphalt, brick, cement mortar, and metal (aluminum) mailbox.

Look Around You



What natural resources were used to build this classroom?

Optional Slide: The majority of what students see in the classroom will be made from rock or mineral products. If it isn't grown, it is mined from the Earth's crust.

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