

What Minerals and Rocks to We Use?

Name: _____

Date: _____

Minerals and Rocks We Use

- Many minerals and rocks are _____ because they are used in inventions that make life easier.
- Many of these minerals and rocks come from _____.
- An _____ is any solid Earth material that can be mined at a profit.
- These resources are _____.

Metallic Minerals

- Why are many of the ores used in everyday products metallic minerals?
 - For example, gold and silver are two rare but important minerals commonly used to make items of beauty, _____, and electronic devices, such as cell phones, televisions, and computers.
- These two minerals exhibit _____.
- _____ describes a minerals' ability to resist crushing, bending, breaking, or tearing.
- Silver is _____, or able to be flatten by pounding with a hammer.
- It is used to make _____, knives, and forks, and to purify water.
- Gold is _____, meaning it can be stretched into wire.
- _____ is another ductile metal used in wiring and electrical contacts.
- All true _____ are ductile.
- Gold is also used to treat and diagnose some rare _____.
- And, because gold does not react with most other substances on Earth, it is used in _____, fillings, and even some types of braces.
- Gold is used in _____ hardware, such as a memory chip.

Scripture Spotlight

- *What does **Genesis 2:11** say was in the land of Havilah? What else was there according to verse 12?*

Nonmetallic Minerals

- _____ is a nonmetallic mineral with many uses.
- Quartz crystals are sometimes used as _____.
- A _____ is a mineral that is valued for its beauty.
- Gems are used extensively in the _____ industry
- Many of these dazzling gems are found on the _____ and scepters of royalty.
- _____ is another nonmetallic mineral that is probably best known as a precious gem used in making rings and other jewelry.
- However, because of it is the _____ known mineral on Earth, diamond has other important uses.
- _____ used to penetrate Earth's rocky crust are coated with diamonds.
- The mineral _____ is used to make hydrofluoric (HF) acid.
- This acid is rough and is used to etch and polish _____.
- It is used to clean _____ and stone buildings.
- Many cleaning products contain HF acids because it removes _____ and polishes tarnished metals.
- It is also used to make _____, pesticides, and gasoline.
- The mineral feldspar is used to make _____ and other types of ceramic items.
- It is also used in flooring tiles, soaps, cement, concrete, fertilizers, and _____.
- Feldspar commonly weathers to produce _____
_____. Clay minerals can be used to make water pipes, bricks, and many other materials used in construction.

Rocks and Sediment

- Minerals and rocks are used to make many of the products people use in _____ life.

Mount Rushmore

- Carved into the side of a mountain in the Black Hills of North Dakota are the faces of _____ presidents of the United States
 - _____
 - _____
 - _____
 - _____

- This massive sculpture is the work of Gutzon Borglum, who worked on cutting or chiseling the granite of the mountain from _____ through _____.
- The work employed nearly _____ men and women.
- _____ was used on portions of the granite after carefully planned drill holes were made.
- Then jackhammers and _____ were used accomplish the project.

Scripture Spotlight

- *How many rocks are mentioned in **Matthew 16:18**? If you said only one, look again!*

Obtaining Earth Materials

- Some rocks and minerals form at or very close to Earth's _____.
- Most, however, form _____ within Earth.
- Rocks and sediment at the surface are often _____.
- Rocks and minerals that form _____ within the crust are obtained by other mining methods.
- A _____ is a surface mine from which large slabs of rock or large volumes of sediment are removed.
- Many quarries use special _____ to cut and remove large slabs of rock.
- _____, marble, sandstone, and slate are some types of rocks mined in the United States.
- Other quarries use _____ and dump trucks to mine sand and gravel.
- Some valuable Earth materials are obtained by _____ methods.
- An open-pit mine is used to recover rocks or minerals that are _____ to the Earth's surface.
- This type of mining _____ the land.
- Laws now require the mined lands be _____, or restored to their original condition.
- _____ mines are used when minerals or rocks lie deep within Earth's crust.
- Some underground mines resemble huge _____ that include many rooms.

- Other underground mines are _____ shafts that are drilled to reach the ore.

Mining

- Underground mines _____ disrupt the land like open-pit mines and quarries do.
- However, wastes from these mines can _____ the environment.
- Working in these mines poses many health _____ to miners.
- Underground coal miners often must work in _____, poorly lit, hot, confined spaces.
- They face the risk of _____, explosions, and exposure to harmful gases.
- Dust from coal can cause _____ disease.
- In 2010, 33 miners were trapped in the San Jose copper and gold mine in Chile after a mine _____.
- The men were trapped _____ underground.
- Rescue workers could _____ food and personal items to the men.
- They were finally rescued after _____, and all 33 of them survived.

Earth's Resources

- There are _____ types of natural resources.
- _____ *resources* are those that are used faster than they can be replaced.
- Minerals, _____, sediment, _____, and soil are all nonrenewable resources.
- _____, such as oil, natural gas, coal, uranium, are also nonrenewable.
- _____ *resources* are those that can be replaced in relatively short period.
- Resources that will likely _____ run out, such as wind and solar energy, are also renewable resources.
- Do you think land and soil are renewable resources? Why or why not?
- Land not only provides mineral resources, but it also provides the _____ required for living, transportation, growing crops, and many other uses.
- Land can also be used for grazing _____.

Earth's Resources: Land and Soil

- _____ is used to grow crops and other plants.

- Unfortunately, unwise farming _____ can make land and soil unusable for many years by stripping the soil of its nutrients.

Earth's Resources: Minerals, Rocks, & Sediment

- Do you think the minerals and rocks you have studied are renewable resources? Why or why not?
- Even though it may seem that there is an endless supply of sediment, rocks, and minerals, most of these Earth minerals are _____ resources.
- Most minerals, rocks, and sediment take as _____ time to form.
- Some exist only in very _____ amounts.
- _____, for example, is abundant natural resource.
- However, iron is _____ because it takes a very long time to form.
- _____ is a nonrenewable resource for two reasons
 - It takes gold a very long time to _____
 - It exists in very _____ amounts in Earth's crust

Earth's Resources: Uranium

- _____ is a nonrenewable natural resource.
- Some forms of this mineral naturally break down, or _____.
- As it decays, enormous amounts of energy are released in the form of _____ energy.
- This energy can be used to generate _____.
- Unfortunately, harmful wastes form when uranium _____.
- Storing these wastes _____ is a constant concern.

Conserving Earth's Resources

- God provided us with resources that make our lives _____.
- Whether a resource is renewable or nonrenewable, it should be used _____.
- The wise use of natural resources is called _____.