

What Are Minerals?

Name: _____

Date: _____

Minerals

- A _____ is a solid, inorganic, natural material with a certain structure and composition.
- Minerals are the _____ throughout their composition.

Mineral Characteristics

- Minerals are _____.
- Minerals are _____. This means that they were never alive or part of anything that was alive.
 - Graphite is made of carbon but was _____ alive.
- Minerals form in _____.
- Minerals have a specific _____ make-up, or composition.
 - For example, the formula for halite (table salt) is _____. So, one molecule of halite is always made of one atom of sodium (Na) and one atom of chlorine (Cl).
- Minerals have a definite _____. A mineral's structure depends on the atoms that make up the mineral and how the atoms combine.
 - Diamond and graphite are both made only of carbon (C). However, the carbon atoms in diamond are arranged in a different _____ than the carbon atoms in graphite.

Properties of Minerals

- Each type of mineral has certain characteristics or _____.
- Different properties are the result of the _____ compositions and physical structure of each mineral.
- _____ is likely the first property that you might observe.
- Some minerals are always the same color, such as _____.
- _____ is a property that describes the way a mineral reflects light.
- A mineral with metallic luster is _____, like a polished metal.
 - _____ and pyrite have metallic luster.
- _____ minerals do not have a shiny luster.
- The surface of talc resembles the surface of a pearl, so talc's luster is described as _____.
- Quartz has a _____ luster.

- Because one form of the mineral hematite looks like an earthen clay pot, its luster is described as _____.
- _____ is the color of a mineral in its powdered form.
- A streak test is done by dragging a mineral across an unglazed, porcelain tile called a _____.
- This causes the part of the mineral being dragged to break down into a _____.
- Minerals with _____ luster produce dark-colored streaks.
- Minerals with _____ luster are usually produce either colorless or very light streaks.
- Minerals that are harder than the streak plate show _____ streak at all.

Properties of Minerals: Hardness

- Another mineral property is _____.
- Hardness is the _____ of a mineral to being scratched.
- A mineralogist named Friedrich Mohs developed a _____ that ranks the hardness of certain minerals.
- Minerals and objects with higher numbers on the scale will scratch minerals and objects with _____ numbers on the scale.

Properties of Minerals: Cleavage & Fracture

- _____ are arranged differently in different minerals.
- These arrangements cause minerals to break in _____ ways.
- Minerals that break along smooth planes have _____.
- _____ is a mineral that has cleavage in only one direction.
- This causes it to cleave, or break, into _____ sheets.
- Minerals that break along rough, uneven surfaces have _____.
- _____ is one mineral that fractures.

Properties of Minerals: Other Properties

- In addition to color, luster, streak, hardness, and cleavage or fracture, many minerals have _____ properties.
- The mineral magnetite, for example, is _____.
- Halite tastes _____.
- Gold does not _____.
- The mineral calcite has _____ unique properties.
- It _____ when it contacts an acid.
- It also has a property called _____, which causes light shining through it to split into two rays.

Review

1. What are the properties of minerals?
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____
 - f. _____
2. What are the five characteristics of a mineral?
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____

Common Minerals

- Earth is made up of more than _____ different minerals.
- However, only a few minerals are _____ found.
- Think about the minerals we have studied in this lesson.
- They are made up of some of the most common _____ on Earth.
- For example, silicon and _____ are the two most abundant elements on Earth.
- So, it makes sense that quartz, which is made up of silicon and _____ (SiO_2), is the most abundant mineral on Earth.

Common Minerals & Their Properties

- Mineral: Calcite
 - Common Color(s): colorless, white, or light pink
 - Luster: _____
 - Hardness: _____
- Mineral: Fluorite
 - Common Color(s): colorless, green, or purple
 - Luster: _____
 - Hardness: 4
- Mineral: Galena
 - Common Color(s): lead-gray
 - Luster: metallic
 - Hardness: _____
- Mineral: Graphite
 - Common Color(s): dark gray to black

- Luster: _____
- Hardness: 1-2
- Mineral: Gypsum
 - Common Color(s): white, colorless, or gray
 - Luster: glassy or dull
 - Hardness: _____
- Mineral: Halite
 - Common Color(s): colorless or white
 - Luster: _____
 - Hardness: _____
- Mineral: Hematite
 - Common Color(s): silvery-gray, reddish-brown, or black
 - Luster: metallic, dull, or _____
 - Hardness: 5-6
- Mineral: Hornblende
 - Common Color(s): dark green or black
 - Luster: glassy
 - Hardness: _____
- Mineral: Magnetite
 - Common Color(s): black
 - Luster: _____
 - Hardness: 5.5-6.5
- Mineral: Mica
 - Common Color(s): brownish-black or white
 - Luster: glassy
 - Hardness: _____
- Mineral: Feldspar
 - Common Color(s): pink or less commonly gray
 - Luster: _____
 - Hardness: _____
- Mineral: Pyrite
 - Common Color(s): brassy yellow
 - Luster: _____
 - Hardness: 6-6.5
- Mineral: Quartz
 - Common Color(s): colorless, white, gray, purple, orange, or pink
 - Luster: _____
 - Hardness: 7
- Mineral: Talc
 - Common Color(s): pale green, white, or gray

- Luster: pearly
- Hardness: _____

Common Minerals

- Some minerals are called _____ - _____ minerals because they make up most of the rocks on Earth.
- Although many people use the terms mineral and rock interchangeable, they are _____ the same.
- A _____ is a solid, natural, inorganic material.
- A mineral also has a _____ chemical make-up and definite physical structure.
- A rock could be organic and is made up of _____ than one mineral.

Scripture Spotlight

- *What minerals are mentioned in Exodus 28:9-12? What are they used for?*