

Science: Geology

Physical Properties of Minerals

Objectives

Students will be able to:

- Define the eight basic physical properties of minerals.
 - Describe any mineral with the basic properties.
 - Investigate mineral properties through technology.
 - Define mineral.
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Warm-Up

The homework from the night before should be to bring in any rock. Have students take five minutes to write down a description of this rock with as much detail as possible.

Lesson

- Review yesterday's lesson: What is a mineral?
- Introduce the eight physical properties of minerals.
 - ◇ Luster
 - ◇ Color
 - ◇ Cleavage
 - ◇ Crystal form
 - ◇ Hardness
 - ◇ Specific gravity
 - ◇ Streak
 - ◇ Fracture
- Look at three minerals of your choice in Wolfram|Alpha and review the different physical properties (e.g., calcite, halite, gypsum, etc.).



halite



Assuming "halite" is a mineral | Use as a word instead

Input interpretation:

halite

General properties:

[More](#)

formula

NaCl

Basic properties:

density	2.17 g/cm ³
transparency	transparent
birefringence	0.
luster	vitreous
Mohs hardness	2.5
tenacity	brittle
streak	white
magnetism	nonmagnetic
color	white clear light blue dark blue pink
fracture	brittle
molecular weight	58.44 (grams per mole)

[Units »](#)



gypsum



Assuming "gypsum" is a mineral | Use as a chemical compound or a general material or a word or a city instead

Input interpretation:

gypsum

General properties:

[More](#)

formula	$\text{CaSO}_4 \cdot 2(\text{H}_2\text{O})$
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Basic properties:

density	2.3 g/cm ³
transparency	transparent translucent
birefringence	0.0095
luster	vitreous subvitreous silky pearly dull
Mohs hardness	2
tenacity	flexible
streak	white
magnetism	nonmagnetic
color	white colorless yellowish white greenish white brown
fracture	fibrous
molecular weight	172.2 (grams per mole)

[Units »](#)

- Have students choose a mineral and write down the information about the eight mineral properties that were discussed as well as one fact that was not discussed.

Closing

Now that students have learned the terms to describe minerals, have them describe the rocks they brought to class today with the correct terminology.