



WHO AM I?

I am a person who studies the history of the Earth by learning about its rocks, minerals, and land formations. Some of the questions I seek answers for include:

- How did our Earth form?
- How does our Earth change over time?
- What causes these changes?
- What do rocks and minerals tell us about our Earth?

My work is interesting, fun, and sometimes dangerous as I explore volcanoes, earthquakes, and mines deep in the Earth where wonderful minerals are found. But wherever my work takes me, it is always filled with exciting new discoveries. Who am I?

Find the following words in the puzzle and circle the letters of each word. The left over letters spell the answer.

M	I	N	E	R	A	L	S	S
E	A	R	T	H	G	A	G	E
T	G	E	M	E	N	V	K	D
A	R	I	B	D	O	A	C	I
M	A	G	M	A	N	O	O	M
O	N	N	O	I	S	O	R	E
R	I	E	C	I	L	A	O	N
P	T	O	G	F	A	U	L	T
H	E	U	T	S	U	R	C	T
I	I	S	C	H	I	S	T	S
C	T	O	N	A	C	L	O	V

AGE
BASALT
CRUST
EARTH
EROSION

FAULT
GEM
GRANITE
ICE
IGNEOUS

LAVA
METAMORPHIC
MINERALS
MOON
ROCK

SAND
SEDIMENT
SCHIST
VOLCANO



Minerals and Mineral Properties

Minerals have qualities that we call properties. Properties are things that minerals have or can do. Fill in the blanks of the following properties from the words below..

The shape of a mineral is called its _____.

If you rub a mineral against a ceramic plate, the mineral will leave a colored

_____ behind. Different minerals leave different colored marks, which help us to identify minerals.

If you hit minerals with a hammer, the way the break apart is called _____ . Calcite and galena will break into miniature versions of their larger crystals.

The _____ tests the property of hardness, which tells geologists how easy it is for one mineral to scratch another. It ranks minerals from 1 to 10, with 1 being the softest mineral (talc), and 10 being the hardest (diamond). Talc is so soft you can scratch it with your fingernail!

Color and density are also very useful

_____.

CLEAVAGE

MOHS SCALE

HABIT

PROPERTIES

STREAK



Rocks, part I

There are three classes of rocks: igneous, sedimentary, and metamorphic.

Igneous rocks form when molten rock cools and hardens. Sometimes molten rock cools inside the earth. Other times it erupts onto the surface from volcanoes. Gas bubbles can be trapped in the rock during cooling, leaving tiny holes in the rock.

Sedimentary rocks are formed from pieces of broken-down rock. The pieces are called sediment. Sediments accumulate in layers and, over a long period of time, harden into rock. Fossils can be found in these rocks.

Metamorphic rocks form under intense heat and pressure. These rocks often have ribbon-like layers and may have shiny crystals that formed by minerals growing slowly on their surface.

Below are some features to look for in a rock to help you identify which class it belongs in. Read the following descriptions then fill in the blank with one of the features below.

Small, flat surfaces that are shiny or sparkly, like tiny mirrors: _____

Imprints of leaves, shells, insects, or other items in the rock: _____

"Holes," like Swiss cheese, in the rock: _____

A shiny and smooth surface, like colored glass: _____

Straight or wavy stripes of different colors in the rock: _____

Individual stones, pebbles, or sand grains visible in the rock: _____

Features:

sand or pebbles

gas bubbles

crystals

ribbon-like layers

glassy surface

fossils



Rocks, Part II

Rock Research: Find a rock and see if you can identify it.

<p>Draw your rock.</p>	<p>Does your rock have any holes in it?</p> <p>Yes No</p>	<p>Can you see any crystals in your rock?</p> <p>Yes No</p>
<p>Can you see individual stones, pebbles, or sand grains in your rock?</p> <p>Yes No</p>	<p>Does your rock have stripes or wavy lines?</p> <p>Yes No</p>	<p>Can you identify your rock?</p> <p>Igneous Sedimentary Metamorphic</p>

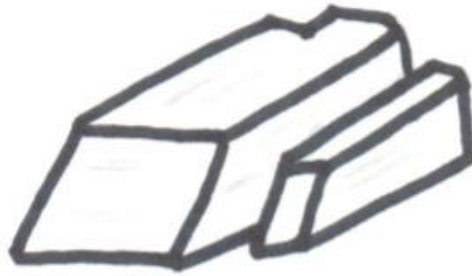
A= Quartz

mineral



B= Mica

mineral

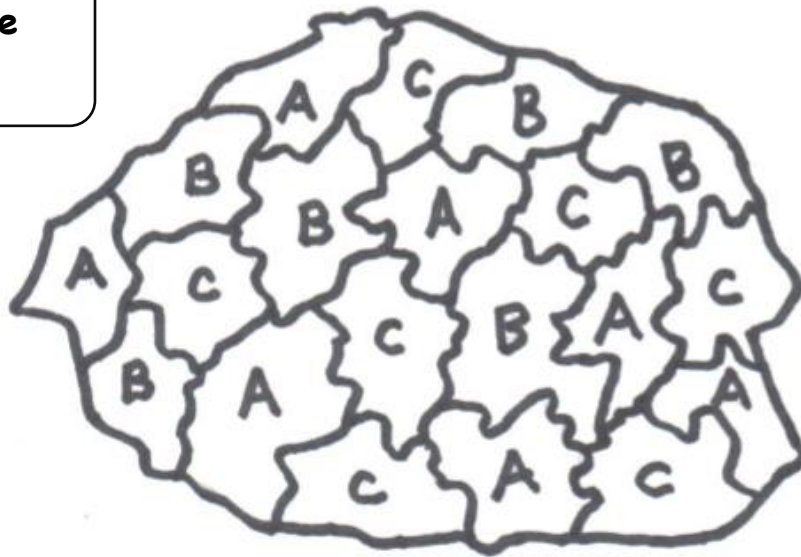


C= Feldspar

mineral

Granite

rock



Color the minerals, then color the corresponding letters in the rock. For example, if you color the quartz green, then color all the A spots in the rock green.