

HR: _____

Name: _____

Date: _____

Period: _____

TREASURES IN THE EARTH

Did you know that earth's crust is loaded with minerals-some of them common, some of them very rare? Even those that don't cost hundreds or thousands of dollars are valuable and useful. All minerals are natural, inorganic solids, which have interesting crystalline structures. Minerals are usually identified by certain physical properties such as hardness, streak, and luster. They can even be identified by their special properties if they have any.

We need your help! Ms. Collier's science classes have decided that you can actually find minerals right in your own backyard. In that case, they decided to go on a scavenger hunt to see how many different minerals they could find around the school. Follow along to see if you can figure out the names of the minerals that were found using "Mohs' Hardness Scale" and the chart, "Properties of Some Common Minerals". Good luck! We need all the help we can get!

1. Jordan and Jadynd found a mineral that is colorless, scratches gypsum but not fluorite. It leaves a colorless or white streak, has a nonmetallic luster, causes a double image, and has a reaction to acid. What is it? _____

2. Darnell and Dazee's favorite mineral is gray and leaves a gray or black streak. It has a metallic luster. It can be scratched by a nail but not a fingernail, and it is heavy. What is their favorite mineral?

3. The mineral that Kennadi and Emily found is brassy, leaves a greenish black streak, and its nickname is fool's gold. It cannot scratch quartz, but it can scratch orthoclase. It also has metallic luster. What is it? _____

4. Meanwhile in the schoolyard, Joshua and Eric found a colorless chunk with a salty taste. It has a nonmetallic luster and is soft enough to be scratched by a fingernail but cannot be scratched by a penny. It does not scratch calcite. What is it?

5. Keryn and Charisma have some yellow stones that leave a yellow streak. They can be scratched with a fingernail. They wonder if they could be gold, but they do not have a metallic luster. They also smell like rotten eggs. What

might they be?

6. Taylor and Quinterria are holding a very soft mineral that leaves black "grease" on their fingers and writes on paper. It makes a black streak and has a shiny luster. What is it? _____

7. Both Amal and Nathaniel have found samples of a red mineral on the softball field, which leaves a gray streak. It can be scratched with a fingernail and with a penny, and it can be easily cut with a knife. What is it? _____

8. Jaylen and Kahmar have a handful of whitish-gray stones with a nonmetallic luster that leave a colorless streak. They found these out in front of the school. They can be scratched by a steel file but not by apatite. What do they have?

9. Michaela and Roosevelt have a pile of white, nonmetallic stones that leave a white streak. They can be scratched with a fingernail. What are they?

10. Sandra and Adia are especially excited about finding a white mineral. They see that it is fluorescent because it glows under an ultraviolet light. It leaves a colorless streak and cannot be scratched with a penny, but can be scratched with a

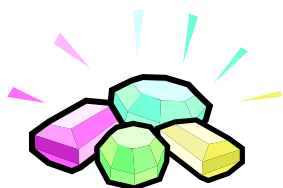


knife. What might it be?

11. Donovan and Ramish have picked up a mineral near the track, which feels soapy and leaves a white, powdery residue on their hands. It is very soft and flakes off. What have they probably found?

12. A brown mineral that leaves a brown streak is in Cameron's book bag. It can be scratched by a steel file but not by a knife. It has a metallic luster. What might it be?

13. The mineral that Sahaj and Jillian found was colorless but they learned in class that it can come in many colors and has many uses. Its streak is colorless and it has a hexagonal crystalline structure. It can scratch a steel file but not quartz. What was it? _____
14. The next mineral that Jalen, Mekhi, and Toussaint found is what many jewelry pieces are made out of. It is metal, golden in color, and has a yellow streak. Depending on the softness of the mineral, some of it can be scratched by a fingernail while others can be cut easily with a knife or nail. It can also be scratched by a penny. What is it? _____
15. The mineral that Dilan and Gabe found by the sidewalk has the special property known as magnetism. This mineral attracts objects that have iron in them. It has metallic luster, but its streak and color is black. Its crystalline structure is cubic and it can be scratched by a steel file. What did they find? _____
16. Ms. Collier was happy when Khiya and Ade found this mineral. She wears a lot of it as jewelry. This metal has a silver color, and its streak can be light gray to silver. What mineral was Ms. Collier so happy about finding? _____



17. The next mineral that Steven found on the scavenger hunt around school was really hard. It is almost as hard as a diamond according to Mohs' hardness scale. It can be found in three different colors, such as blue, brown, and even colorless. What did he find? _____
18. Tracy and Amiyah were hoping to make some money on the mineral that they found because it is considered a gemstone and is used to make jewelry. This means that it is rare and can be cut by a gemologist. It can come in many colors such as white, pink, yellow, and blue. The one they found was colorless. This mineral can scratch quartz. What is it?

19. Everyone in class knew what the next mineral was because we have looked at it in class before. It can be yellow-red, green, or black and is used to make jewelry. It has a colorless streak. It also can scratch a steel file and quartz. Daniel and Malik know the answer. What is it?

20. Dasean and Jozriel found the last mineral. It was difficult for them to spot it in the clay because it has a copper red color. Using a porcelain tile, they noticed that the streak color was also copper red. It is made of metal and has a metallic luster. What was the last mineral found?

MOHS' HARDNESS SCALE



Hardness	Characteristics and Examples
1	soft, greasy, flakes on fingers (talc)
2	can be scratched by fingernail (gypsum)
3	can be cut easily with a knife or steel nail, or scratched by a penny (calcite)
4	can be scratched easily by a knife (fluorite)
5	can be scratched by a knife with difficulty (apatite)
6	can be scratched by a steel file (orthoclase)
7	scratches a steel file and glass (quartz)
8	scratches quartz (topaz)
9	scratches anything lower on scale (corundum)
10	scratches anything lower on scale (diamond)

Properties of Some Common Minerals

MINERAL	COLOR	STREAK	HARDNESS	CRYSTAL SHAPE	OTHER PROPERTIES
METALLIC LUSTER					
Graphite	black to gray	black to gray	1-2	hexagonal	writes on paper
Silver	silvery, white	light gray to silver	2.5	cubic	metal
Galena	gray	gray to black	2.5	cubic	heavy
Gold	pale-golden yellow	yellow	2.5-3	cubic	metal
Copper	copper red	copper red	3	cubic	metal
Chromite	black or brown	brown to black	5.5	cubic	_____
Magnetite	black	black	6	cubic	magnetic
Pyrite	light brassy yellow	greenish black	6.5	cubic	nickname is fool's gold
NONMETALLIC LUSTER					
Talc	White, greenish	white	1	monoclinic	feels like baby powder
Bauxite	Gray, red, brown, white	gray	1-3	_____	_____
Gypsum	Colorless, gray, white	white	2	monoclinic	_____
Sulfur	Yellow	yellow to white	2	orthorhombic	rotten egg smell
Muscovite	White, gray, yellow, rose, green	colorless	2.5	monoclinic	_____
Halite	Colorless, red, white, blue	colorless	2.5	cubic	salty taste
Calcite	Colorless, white	colorless, white	3	hexagonal	reaction with acid light refraction
Dolomite	Colorless, white, pink, green gray	white	3.5-4	hexagonal	_____
Fluorite	Colorless, white, blue, green, red, yellow, purple	colorless	4	cubic	fluorescent
Hornblende	Green to black	gray to white	5-6	monoclinic	_____
Feldspar	Gray, green, white	colorless	6	monoclinic	_____
Quartz	Colorless, colors	colorless	7	hexagonal	many uses
Garnet	Yellow-red, green, black	colorless	7.5	cubic	used to make jewelry
Topaz (gemstone)	White, pink, yellow, blue, colorless	colorless	8	orthorhombic	used to make jewelry
Corundum	Colorless, blue, brown	colorless	9	hexagonal	_____

