

NAME _____

DATE _____

PARTNER(s) _____

PERIOD _____

EARTH SCIENCE : NAME THAT MINERAL!!!!!!!!!!!!

- OBJECTIVE:**
- (1) Identify minerals using physical characteristics
 - (2) Make observations,
 - (3) Become skilled at using mineral identification tools.

MATERIALS NEEDED: mineral samples, mineral identification chart, HCl, copper penny, glass plate, and magnet.

IMPORTANT NOTE: In this lab you will be working with many items than need to be handled with special care. You must obey all safety rules - at all times!!!!

- DIRECTIONS:**
- (1) Pick up samples from Mr. Hugick. Make sure the number stays with the right sample. So, only work with 1 sample at a time.
 - (2) In each section you will find questions and facts about each mineral sample- please work with your partners to identify each mineral. WORK HARD!!!!

PRE-LAB:

What is the hardness of each of the following tools?

Fingernail _____

Cu penny _____

Glass _____

Streak plate _____

calcite	sulfur	talc
halite	magnetite	galena
fluorite	pyrite	quartz
orthoclase	hematite	olivine
copper	gypsum	muscovite
biotite	graphite	amphiboles
garnet	pyroxene	

- (1) A. Metallic or non-metallic luster? _____
- B. Using the information from ESRT p. 16- how many minerals could this be? _____
- C. This **mass** of this sample is _____ **g** and the **volume is** _____
 what is the specific gravity (**density**)? _____
- D. **Hardness:** Is the Mineral **HARDER** or **SOFTER** than each:
 fingernail _____

Cu penny _____
glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

E. This mineral is an ore of Pb.

G. Name this mineral: _____

(2) A. metallic/ non-metallic : _____ (a glassy luster is non-metallic)

B. color: : _____ (this mineral may be many colors)

C. This mineral will NOT react with HCl, but it is used to make hydrofluoric acid !!!!!

D.Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

E. This sample is NOT quartz.

G. Name that mineral: _____

(3) A. Metallic / non-metallic: _____ (This sample is weathered... but it should be metallic)

B. streak color of mineral: _____

C. Is this mineral magnetic? _____

D. Name that mineral: _____

(4) A. metallic / non-metallic: _____

B. color: _____

C. smell: _____

D. This mineral is an ore of S. What is S ? _____

E.Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

(5) A. Metallic / non-metallic: _____

B. color(s): _____ (most of the time this mineral is white)

C. **Hardness: Is the Mineral HARDER or SOFTER than each:**

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. This mineral is used in cement and bubbles in acid.

E. This mineral has a double refraction characteristic with visible light. Place a small dot or straight line on a piece of paper, then place a transparent sample of this mineral over the dot/line and observe the double refraction of visible light.

F. Ask Mr. Hugick for some HCl. Place two drops on the sample. With moist towel wipe HCl off sample. Throw out all paper towels. acid results: _____

G. Name that mineral? _____

(6) A. Metallic / non-metallic: _____

B. color: _____

C. **Hardness: Is the Mineral HARDER or SOFTER than each:**

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. streak color: _____

E. Calculate the specific gravity (density):

(1) mass = _____ (2) volume = _____

(3) density = _____

F. This mineral is an ore of sulfur and is called "fools gold"

G. Name this mineral: _____

(7) A. All of these samples are the same mineral.

B. metallic/ non-metallic luster: _____

C. color (s): _____ (this mineral can be many colors)

D. **Hardness: Is the Mineral HARDER or SOFTER than each:**

fingernail _____

Cu penny _____

glass _____
relative hardness: 1 2 3 4 5 6 7 8 9 10

E. This mineral is used in glass, jewelry and electronics.

F. Name this mineral: _____

(8) A. metallic / not-metallic: _____

B. color _____ (Remember this color... & this mineral)

C.Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. This mineral is used in glass and ceramics.

E. Name that mineral: _____

(9) A. metallic or non-metallic: _____

B. color: _____

C.Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. This mineral is salty tasting and changes the melting point of ice (melts it).

E. Name that mineral: _____

(10) A. Both samples are the same material. metallic or non-metallic: _____

B. color: _____

C.Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. streak color: _____

E. Name this mineral: _____

(11) A. Is this mineral metallic or non-metallic: _____

B. color: _____

C. Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

D. This mineral is used in furnace bricks and jewelry.

E. Name that mineral: _____

(12) A. Is this mineral metallic or non-metallic: _____

B. color: _____

C. Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

D. What is a distinguishing characteristic of this mineral? _____

E. Name this mineral: _____

(13) A. metallic or non-metallic: _____

B. color: _____

C. Hardness: Is the Mineral HARDER or SOFTER than each:

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. This mineral is also a native element (only made of one element). It is used in wires and telephones.

E. Name that mineral: _____

(14) A. metallic or non-metallic: _____

B. color: _____

C. **Hardness: Is the Mineral HARDER or SOFTER than each:**

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. Name that mineral: _____

(15) A. This mineral is usually colorless

B. metallic or non-metallic: _____

C. color: _____

D. Cleavage for this mineral is in _____ direction (s).
(How many directions does it peel?)

E. This mineral can be see through.

F. Name that mineral: _____

(16) A. metallic or non-metallic: _____

B. color: _____

C. Cleavage for this mineral is in _____ direction (s).
(How many directions does it peel?)

D. Name that mineral: _____

(17) A. metallic or non-metallic: _____

B. color: _____

C. **Hardness: Is the Mineral HARDER or SOFTER than each:**

fingernail _____

Cu penny _____

glass _____

relative hardness: 1 2 3 4 5 6 7 8 9 10

D. What is this mineral's Distinguishing Characteristics? _____

E. What is this mineral used as a lubricant and in writing tools.

F. Name that mineral: _____

NAME THAT MINERAL ANSWER SHEET

(TURN IN ONLY ONE ANSWER SHEET PER GROUP)

GROUP MEMBERS:

ANSWERS:

- | | |
|----------|-----------|
| 1. _____ | 10. _____ |
| 2. _____ | 11. _____ |
| 3. _____ | 12. _____ |
| 4. _____ | 13. _____ |
| 5. _____ | 14. _____ |
| 6. _____ | 15. _____ |
| 7. _____ | 16. _____ |
| 8. _____ | 17. _____ |
| 9. _____ | |

POSSIBLE MINERALS:

calcite	sulfur	talc
halite	magnetite	galena
fluorite	pyrite	quartz
orthoclase	hematite	olivine
copper	gypsum	muscovite
biotite	graphite	amphiboles
garnet	pyroxene	

NAME THAT MINERAL ANSWER SHEET

(TURN IN ONLY ONE ANSWER SHEET PER GROUP)

GROUP MEMBERS:

ANSWERS:

- | | |
|----------------------------|----------------------------|
| 1. galena _____ | 10. hematite _____ |
| 2. fluorite _____ | 11. olivine _____ |
| 3. magnetite _____ | 12. talc _____ |
| 4. sulfur _____ | 13. copper _____ |
| 5. calcite _____ | 14. gypsum _____ |
| 6. pyrite _____ | 15. muscovite _____ |
| 7. quartz _____ | 16. biotite _____ |
| 8. orthoclase _____ | 17. graphite _____ |
| 9. halite _____ | |

POSSIBLE MINERALS:

calcite
halite

sulfur
magnetite

talc
galena

fluorite
orthoclase
copper
biotite
garnet

pyrite
hematite
gypsum
graphite
pyroxene

quartz
olivine
muscovite
amphiboles