

(Cri)Mineral Lab Make Up Chart for Part 1 Part 1:

1. Observe the color of the mineral and record it in the data table below.
2. Record the luster of each mineral as either metallic or non-metallic.
3. Use the laminated card for the Hardness test. Scratch each mineral sample one time to determine the hardness. Using your **finger nail** first, and then if needed **the penny**, and finally the **steel nail** if needed. Record your findings on the table below. You will not know an exact #, but can give a range. For example, record "between 2.5 – 3.0" if your fingernail cannot scratch it, but a penny can.
4. Find a sharp point on your mineral to drag across each streak plate. You may have to drag the mineral back and forth several times to get results. If you cannot see the mark on the white plate, try the dark plate. Record your findings on the data table below.

Data Table:

Mineral #	Hardness	Luster and color	Streak
1	Scratched by fingernail Less than 2.5	Non-metallic Dark or light colored	White, Greenish, or Yellowish
2	Scratched my fingernail Less than 2.5	Non-metallic Shiny black to dark brown	little to no streak
3	Not scratched by steel nail >5.5	Non- metallic Pink	no streak
4	Not scratched by steel nail >5.5	Metallic yellow	greenish-black to black
5	Not scratched by fingernail, but scratched by penny 2.5-3.0	non-metallic white	colorless or white streak
6	Scratched by steel nail 5.5	Metallic gray or black	black streak

Name _____ Class _____ Date _____

TEK 6.6C test the physical properties of minerals including hardness, color, luster, and streak

Infamous (Cri)minerals Lab

Part 2:

Each mineral has a mug file description in the chart below. You will be using this information and clues to identify the 6 minerals and to solve the crimes of two cases.

Mug files

Suspect	Description
Pyrite	Mr. Pyrite has light brassy yellow skin and a cube shaped head. This fellow is also yellow! He runs from everything and leaves behind a greenish-black streak. His friends call him Fools Gold because he carries a metallic guitar. We have rated him a 6.5 on our hardness scale.
Talc	A real softy, Ms. Talc is 1.0 on our hardness scale. If captured, she will break into irregular pieces. She can be white skinned, but often appears to have a greenish cast. With no definite shape, she has a white streak on her head and will make a greasy getaway! Her alias is Soapstone, and she frequents the Johnson and Johnson plant.
Quartz	Quartz is a clever fellow, appearing most everywhere in a variety of colored disguises. He is a hardened criminal (a 7 on our scale) and leaves no trace of a streak. Quartz has a love for crystal watches and enjoys hearing them tick.
Calcite	A pale yellow or white gal, Miss Calcite is a mediocre 3 in hardness. She has a colorless or white streak up her back. Calcite is often found hanging out in the eye doctor's offices admiring the lenses.
Magnetite	Mr. Magnetite has a very magnetic personality. He is a shiny guy that is grayish or iron black in color, has a 5.5 on the hardness scale and a leaves a black streak. He is often found hanging out with his friend Hematite at the movies watching Iron Man.
Biotite	Ms. Biotite has a hardness of 2.5 and is often black to dark brown. She leaves behind no color or a very light one. She has a glassy look in her eyes and loves pearly looking objects. Ms. Biotite frequents the mirror to check out her appearance. She spent her younger days watching out windows for her long lost love, Mica. Mica was soon replaced by a truer fellow, glass.

With mug files and all observations that you have made, you are ready to identify the names of each mineral.

Correctly match each Mineral Number to its Mineral Name:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

A. Pyrite

B. Talc

C. Quartz

D. Calcite

E. Magnetite

F. Biotite

Part 3: Now that you've identified each mineral, you are ready to solve the cases to identify the (cri) mineral – the minerals that did each of the crimes. Continue your investigation by reading the Case Files Below.

Case 1:

Your first mission will be to find the infamous (cri) mineral, also known as “baby sprinkler”. He/she is known as a real softy in our circle, but terrifies mothers by getting his/her hands on their babies. In order to solve this crime and catch the (cri) mineral, you must use your training in (cri) mineralogy.

Case 2:

After you have identified the notorious “baby sprinkler” it is time to move on to the case of the “sticky fingered bandit”. On a scale of one to ten this half hardened scoundrel has been known to steel various objects such as cars and refrigerator magnets which he/she adds to his/her immense collection

WHO DUNNIT?: Who are the (cri) minerals?

The cri-mineral for Case 1: _____

The cri-mineral for Case 2: _____

The evidence: Explain how you came to these conclusions.

Case 1 “Baby sprinkler”: We know that it was _____ who did it because _____.

Case 2 “Sticky fingers”: We know that it was _____ who did it because _____.

Lab Questions:

1. Today we used the physical properties of minerals to identify them. Give two examples of physical properties.
_____ and _____
2. To determine the hardness of our minerals we used common objects which is called the _____ scale.
3. The three objects that we used to test for the hardness were _____, _____ and _____
4. In your own words describe how to conduct a streak test.
