# Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Nevada Mineral Identification Lab

***Detectives must gather facts and physical evidence to deduce the events that took place during a crime. Much like detectives, geologists gather physical evidence to better understand Earth processes. First, minerals are identified, and then their histories sometimes can be interpreted.***

## Lab Preview

**Directions:** *Answer these questions before you begin the Lab.*

1. Why is it important for you to be descriptive and broad in your observations of the unknown mineral specimens?
2. How will the magnet, density, feel and smell help you identify the mineral specimens?

### Real-World Problem

How is it possible to distinguish similar-looking materials from each other?

### Goals

* **Observe and record** physical properties of minerals.
* **Determine** mineral names using your observations and identification keys.

### Materials

mineral samples

magnifying lens

mineral testing kit

Mohs scale of hardness

Field harness scale

### Procedure

1. Use the table provided to record your data. Note the columns labeled: *Mineral Number, Luster, Hardness, Streak, Cleavage, Special Properties*, and Mineral Name.
2. Obtain numbered mineral specimens from your teacher. Observe each mineral and accurately record the data based on your tests for physical properties. Be descriptive and broad in your observations.
3. Perform tests to observe your properties.
   1. Luster
      1. Does it look like metal?
      2. If so, it has a metallic luster. If not, it has a nonmetallic luster.
   2. Hardness.
      1. If the mineral will scratch a glass plate or if it is difficult to scratch it with a nail, then it is hard.
      2. If a nail, penny, finger nail will scratch it easily, then it is soft.
   3. Cleavage
      1. Does the mineral have flat sides that reflect light? If so, the mineral has cleavage.
   4. Streak
      1. Rub the mineral on the streak plate. What color is the streak?
   5. Special Properties
      * 1. Is it really heavy for its size?
        2. Could it break into thin sheets? **Do not break minerals!**
        3. Is it magnetic?
        4. Does it write on paper?

### Conclude and Apply

1. **Which properties were most useful in identifying your sample? Which properties were the least useful? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **Explain** why certain minerals seemed to be easy to identify. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **Determine** two properties that distinguish clear, transparent quartz from clear, transparent calcite. Explain your choice of properties. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Which physical properties would be the easiest to determine if you found the mineral specimen in the field?

**For three minerals, list physical properties that were important in their identification.**

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**Nevada’s Mineral Lab**

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| --- | --- | --- | --- | --- | --- | --- |
| Sample  Number | Color | Luster | Streak | Hardness | Other Tests: (magnetism, breakage, density, feel, smell) | Mineral Identity |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |
| 11 |  |  |  |  |  |  |
| 12 |  |  |  |  |  |  |