

Mineral Identification

**Materials:**

- Several different mineral samples
  - A few of the same minerals that look different.
  - A few similarly colored minerals that are different
- Mineral test kit (streak plate, hardness test)

**Background:**

The idea of this lesson plan is to introduce students to mineral identification. Students often think minerals can be identified things like color or appearance. This lesson is designed to show that can be misleading. I use several gypsum samples that are vastly different. One is rose colored massive, one is white fibrous, one is gray crystalline and one is red/yellow crystalline. They look vastly different but are all the same mineral. Then when I have the students identify the minerals, I throw in a red hematite sample, and a red halite sample to keep them honest.

**Exploration:**

1. Hand out the gypsum samples (picture #1) and ask students to carefully examine the minerals and make observations about them.
2. Have students share their observations.

**Instruction:**

1. Ask students if they think any of the minerals are the same.
2. Explain that all the minerals are actually different forms of gypsum. Perform streak test and hardness test to confirm this. If you are feeling brave, you can do a density measurement. I also show fluorescence and phosphorescence in the gray crystalline sample. This is a great way to talk about trace minerals in the samples giving different colors.
3. Explain that color and appearance can be misleading and scientists must rely on better types of tests.

**Assess:**

Have students identify several mineral samples (picture #2) on their own and grade their answers.

**Reteach:**

Show students pictures of different famous diamonds. They love hearing how much they are worth! I chose diamonds with different colors, like the Hope (blue), the Millennium Star (clear) and the Kahn Canary (yellow). They look different but are all diamonds!