

# Review First

## The Nature of Science

### How can minerals be defined by their properties?

Minerals can be found almost anywhere. Some are used to make things we use every day, like pots and pans and bicycles. Even though there are over 4000 kinds of minerals, they all share five characteristics:

1. Minerals are formed by natural processes. Minerals can solidify from a magma, precipitate out of a solution, or form as a solution evaporates.
2. Minerals are inorganic, which means they are not alive and never were.
3. Minerals are solids.
4. Every mineral has its own distinct chemical composition.
5. A mineral's atoms are arranged in a repeating pattern that is unique to that mineral.



Although all minerals share common characteristics, each mineral has its own unique physical properties. Appearance, color, luster, cleavage/fracture, streak color, and hardness are some of the physical properties used to identify a mineral. When identifying a mineral, it is important to examine all the properties of the mineral. For example, to differentiate between the minerals gold and pyrite, physical properties besides color and appearance would have to be tested.

In this Virtual Lab, you will examine physical properties of various minerals. You will identify mystery minerals by performing scientific tests.

#### **Objective:**

Identify minerals by testing them for key properties.

Flip over to begin virtual lab →

## Procedure:

- 1) Select a mystery mineral sample from the tray. Click and drag it to the test plate.
- 2) In the toolbox there are four tools.
- 3) To conduct the first test: Color/Luster, click on the magnify glass and drag it over to the mystery mineral.
- 4) Record observations and findings under the corresponding columns in your test table.
- 5) In the toolbox, click the streak plate. Drag the mystery mineral over the streak plate to test the streak color. Record your test results in your table.
- 6) In the toolbox, click the piece of glass. Drag the mystery mineral over the piece of glass to test the mineral's hardness. Record results in your table.
- 7) Next, click the fingernail scratch tool. Drag the mystery mineral over the fingernail scratch tool to test the mineral's hardness. Record results in your table.
- 8) Click the Properties of Minerals book to compare the data your recorded to the descriptions of different minerals. Determine the identify of the mystery mineral.
- 9) To check your findings, click the button on the front of the test plate. Select the name of the mystery mineral. Click Check.
- 10) If you are correct, continue to the next mystery mineral. If you are incorrect, go back through the Properties of Minerals book to recalculate your findings.
- 11) After testing all the minerals, complete the questions located on the board on the back of your table sheet.

