

## Student Instructions for Performing the Hardness Test



1. Scratch your sample of mineral A with the copper penny.

**Note:** Scratch the minerals gently. You may damage some of them if you scratch them too hard.



2. If the penny left a scratch on the mineral, place it in the space labeled “Soft” on your **Minerals—Soft, Medium, or Hard** sheet. If the penny did not scratch the mineral, put it back in the carton.

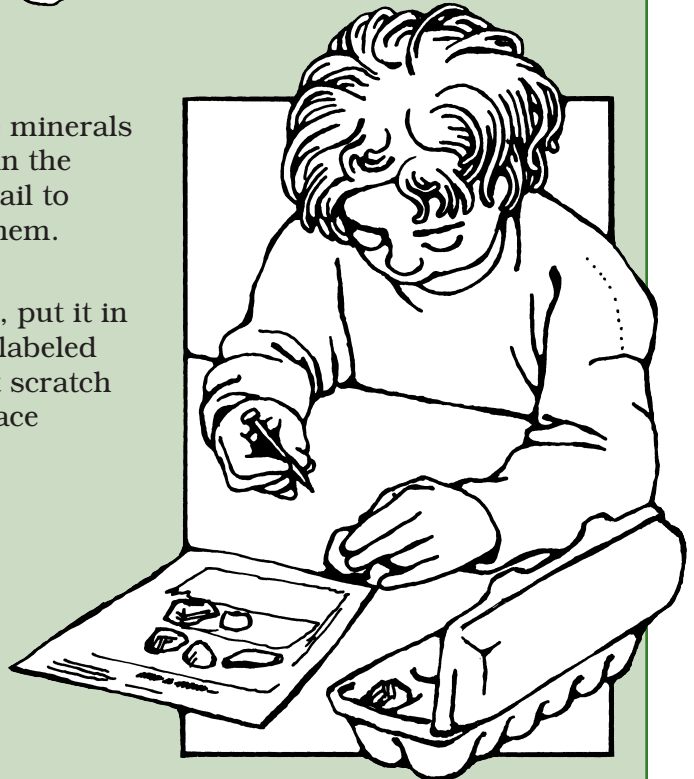
3. Test the remaining 11 minerals with the penny. Place each of them in the appropriate space on the sheet or back in the carton.



4. Now focus on the minerals you have placed in the carton. Use the nail to scratch each of them.

5. If the nail scratches a mineral, put it in the space on the sheet that is labeled “Medium.” If the nail does not scratch the mineral, place it in the space labeled “Hard.”

6. Record your results for each mineral in the space labeled “Hardness” on the mineral profile sheets.



## Reading Selections

### Diamonds

Diamonds are the hardest of all minerals. They were formed long ago in igneous rocks. Today, we mine diamonds in places near extinct volcanoes. But diamonds are also found near old riverbeds. How do you suppose the diamonds got there? Believe it or not, diamonds have even been found in meteorites from outer space!

You probably know that diamonds are used in jewelry. But did you know they are also used in industry? In fact, out of every five diamonds found, only one is used to make jewelry. The others are used for industrial purposes.

For example, diamonds are used to cut, drill, and polish other materials. Powerful drills with diamond tips are used for drilling oil wells. Wire containing diamond bits is used to cut blocks of stone from mining quarries. Diamond powder is used for polishing hard materials such as glass. Surgeons use small knives with diamond blades for delicate eye operations.

Do you think you have a diamond in your set of minerals?



### Talc



Talc is one of the softest of all minerals. It has a waxy luster and a slippery feel. It looks like chalk. You may be able to guess one use for talc: to make baby powder. Talc is also used to make ceramics and pottery.

Because talc resists acid, it is used to make sinks and countertops for chemical laboratories. Talc is a major component of soapstone, a soft rock that is also used to make tabletops.

Can you tell by feeling which of your minerals is talc?

**Minerals—Soft, Medium, or Hard**

**Soft**

**Medium**

**Hard**