



Activity “Mineral Properties”

Objective:

Through demonstration, students become familiar with the physical properties of color, streak, luster, hardness, cleavage and fracture and learn how these methods are used to identify minerals.

Lesson Time:

30 Minutes

Grade Level:

K – 5

Standards Correlation:

Science Standards – 1, 2.1, 2.3, 4.1,
Reading and Writing Standards – 5

Materials:

- 1) Set specimens of
 - a) calcite
 - b) fluorite
 - c) gypsum
 - d) hematite
 - e) mica
 - f) pyrite
 - g) quartz
 - h) sphalerite
- 2) penny
- 3) glass slide
- 4) steel nail
- 5) unglazed porcelain tile (streak plate)
- 6) magnifying glass
- 7) safety goggles

Engage: Part of having a collection is being able to identify all the items within it, whether they were collected in the field or purchased. If you collect your own specimens, how do you know what you have?

Explore: Show students the minerals a – h and have them examine the specimens for physical properties that can be determined visually.

Explain: Discuss the properties that can not be detected without using additional materials. A mineral is harder than any substance it can scratch and is softer than any substance which scratches it. The scratch test can be used to compare the hardness of two substances. Minerals differ greatly in hardness. Some are softer than your fingernail. Others can scratch the hardest of steels. The streak of a mineral is obtained by rubbing a specimen on an unglazed porcelain plate, called a streak



plate. The streak is the color of the powder. Put on safety goggles and test the hardness and streak of the specimens.

Evaluate: Students will fill out Table 1 below on their own and Table 2 with help.

Table 1

Mineral	Color	Streak	Luster	Cleavage
Calcite				
Fluorite				
Gypsum				
Hematite				
Mica				
Pyrite				
Sphalerite				

Table 2

Mineral Name	Softer than fingernail	Softer than copper cent	Softer than steel nail	Softer than glass
Calcite				
Fluorite				
Gypsum				
Hematite				
Mica				
Pyrite				
Sphalerite				

Learning Outcome: Students will be able to take an unknown mineral specimen and perform tests for physical properties.



Activity “Making a Crystal Mobile”