



MINERALS

Activity # 3 - Luster

Recommendations: For grades 3-6. Activity can be completed inside or outside. Adult supervision is recommended.

Purpose: To determine how the surface of a mineral reflects light.

Materials:

- 5 different samples of minerals (5 for each student)
- Toothbrush and some water
- Sunlight/well lit room/flashlight or other light source
- 1 Piece of paper per student
- 1 Writing utensil per student

How it Works:

*Context: There are 2 categories of luster, **metallic and non-metallic**. Some minerals will have a metallic luster meaning they will shine and reflect light the same way metal objects reflect light. The other category of luster is non-metallic. Non-metallic luster can be broken down into other categories such as pearly, resinous, silky, glasses, waxy, etc. Weathered minerals may not have a clean, crystal surface, these are typically described as having an earthy luster.*



Step 1: Have students remove dirt/debris from samples using a toothbrush and water and to number their samples from #1-5.

Step 2: Copy the chart below on a sheet of paper (*1per student*).

Sample #:	Describe the sample:	Luster:
1		
2		
3		
4		
5		

Step 3: Hold each sample one at a time and move them in your hand to catch and reflect light. Have students write down 2 or 3 words describing how they think each sample reflects light. Do this before giving the actual luster types and definition.

Step 4: Now give the students the list and definitions of luster and have them record in the chart the luster for each sample. Types of luster are listed below:

Metallic: The mineral shines like a metal.

NON-METALLIC

Waxy: The mineral shines like wax.

Pearly: The mineral shines iridescently, like a pearl.

Silky: The mineral shines like silk.

Vitreous: The mineral shines like broken glass.

Greasy: The mineral shines like it was coated with a layer of oil.

Resinous: The mineral shines like hardened tree sap.

Dull: The mineral shines minimally to none.

Conclusion:

Different minerals will reflect light differently from other minerals.

How did the student's descriptions of their samples compare with the actual types of luster? Were they similar/different/way off... etc.

Luster is only a useful form of mineral identification when the sample displays a unique luster, such as waxy, greasy, pearly, etc. Samples with a vitreous luster cannot be

distinguished from one another, same applies to metallic luster. Luster can help narrow down the list of minerals it could be.

Also, now that you have examined the luster of your samples, **try out the other 3 activities** to see if you can identify the type of minerals you have. The other activities are:

- Minerals 2 - Hardness
- Minerals 4 - Breakage
- Minerals 5 – Streak test

Resources:

<https://www.youtube.com/watch?v=shwKep6SeVg>