

Mineral Color and Streak Lab

We learned in class that there is a difference between a mineral's color and a mineral's streak. In this activity you will carry out simple experiments to answer the following questions:

1. What is the streak of translucent minerals? Is it always the same?
2. What is the streak of a mineral that comes in several colors?
3. Is mineral color always the same as mineral streak?
4. How do you find the streak of a mineral harder than 6.5?

Each question will be answered at a station. Before beginning your work, look at your station and then find that station this sheet. The procedure for each station is provided at the station.

Station 1

What is the streak of translucent minerals? Is it always the same?

Station 1	
Mineral Name	Streak Color
<i>Halite</i>	
<i>Calcite</i>	
* <i>Corundum</i>	
* <i>Topaz</i>	

* Look in your textbook (pg. 196-198) for the streaks of these minerals.

Station 2

What is the streak of a mineral that comes in several colors?

Station 2	
Mineral Name	Streak Color
<i>Green Fluorite</i>	
<i>Purple Fluorite</i>	
<i>"Clear" Fluorite</i>	

Station 3

Is the mineral color always the same as mineral streak?

Station 3		
Mineral Name	Mineral Color	Streak Color
<i>Pyrite</i>		
<i>Hematite</i>		
* <i>Biotite</i>	<i>Black</i>	
* <i>Gold</i>	<i>Gold</i>	

* Look in your textbook (pg. 196-198) for the streaks of these minerals.

Station 4

Station 4	
Mineral Name	Streak Color
<i>Quartz (h. 7)</i>	
<i>Diamond (h. 10)</i>	
<i>Garnet (h 7.5)</i>	

Name _____ Period _____

Answer the following questions using the data you collected in the lab.

Analysis Questions

1. What do you notice about the streak color of the minerals in station 1?

2. What do you notice about the streak color of the minerals in station 2?

3. Is the streak of the minerals in station 3 the same as the mineral's color?

4. What do you notice about the streak color of the minerals in station 4?

Conclusion Questions

1. Based on your data, what is the streak of any translucent mineral?

2. Based on your data, if you have a mineral that comes in a variety of colors, will its streak be in a variety of colors? _____

3. Based on your data, is the streak of a mineral always the same as the color of the mineral? _____

4. Based on your data, what is the streak of a mineral with a hardness of 6.5 or greater most likely to be? _____

5. How do you find the streak of a mineral harder than a streak plate?

Station 1

1. Streak the mineral halite on the black streak plate. Record the result on your data table.
2. Brush off any mineral powder from the streak plate into the garbage can.
3. Repeat steps 1 and 2 for the mineral calcite.
4. Using your textbook (pg. 196-196) to find the streak of the minerals listed on your data table.
5. Clean up your area: put the minerals in the correct space and leave the textbook on the table. Make sure your streak plate is clean.

Station 2

1. Streak the each sample of the mineral fluorite on the black streak plate. Record the result on your data table.
2. Brush off any mineral powder from the streak plate into the garbage can.
3. Repeat steps 1 and 2 for each mineral sample.
4. Clean up your area: put the minerals in the correct space and leave the textbook on the table. Make sure your streak plate is clean.

Station 3

1. Observe the color of each of the minerals.
Record your observation in the space provided on your data table.
2. Streak each mineral sample on the white streak plate. Record the result on your data table.
3. Brush off any mineral powder from the streak plate into the garbage can.
4. Repeat steps 2 and 3 until both mineral samples are streaked.
5. Look on pages 196-198 to find the streaks of the two minerals listed on the data table.

Station 4

1. Read the summary sheet.
2. Look on pages 196-198 in your textbook to find the streaks of the three minerals on your data table.

Station 4 – Summary of Streak of Hard Minerals

Later in our minerals unit we will learn that minerals have a property called hardness. Hardness describes how easy or difficult it is to scratch a mineral. When you streak a mineral, you are scratching it. This causes it to become powder. This happens because the streak plate is harder than the mineral. But what happens when the mineral is harder than the streak plate?

If you were to try to streak a mineral that is harder than the streak plate, you would scratch the streak plate; the mineral would be left undamaged. In order to find the streak of the harder mineral, you have to scratch it against something that is harder than it. This is usually another mineral.

For example, if you try to streak the mineral carborundum (h. 9.5) on a streak plate, the streak plate will be gouged. You will scratch the streak plate. And you will have a white powder left behind (from the streak plate, not from the mineral!). In order to find the streak of the mineral carborundum, you will have to scratch it against something harder. In this case, there is one mineral harder than carborundum and it is diamond (h. 10).

When you scratch this mineral against diamond, a greenish gray powder appears. Therefore, we know the streak of carborundum is greenish gray.