**Torres- Mineral Identification – Teacher’s guide**

**Purpose:**

We see rocks and minerals on a daily basis. They actually have a lot to do with compositions in the earth, on the earth, and in our universe.

In an Earth and Space class, a lot will be discussed about the compositions of the Earth, different planets, volcanism, and several other topics. Knowing the basic minerals can be very useful once we lead into more topics within the course.

**Objectives:**

To understand the importance of physical properties in identifying minerals and how to actual identify them.

**State Standards:**

Stage H 12 E:

1.Apply scientific inquiries and technological designs to investigate the explanations of the geologic features and structures, diagramming the established geologic eras, periods, and epochs, describing the geological events that led to the formation of the Great Lakes and Illinois, or relating physical and chemical properties of minerals.

**Materials:**

**FOR TEACHER:**

* Powerpoint
* Hydrochloric acid
* Pennies
* Glass
* Streak plates
* Specific minerals

**FOR LAB STATIONS:**

Station 1: penny, glass plate, streak plate

1. Galena
2. Graphite
3. Calcite
   1. Hydrochloric acid

Station 2: penny, glass plate, streak plate

1. Gypsum
2. Halite
3. Garnet
4. Augite

Station 3: penny, glass plate, streak plate

1. Muscovite
2. Fluorite
3. Quartz

Station 4: penny, glass plate, streak plate

1. Pyrite
2. Orthoclase
3. Corundum
4. Bauxite

**Length of lab:**

|  |  |
| --- | --- |
| Powerpoint | 5 mins |
| Lab stations | 5-7 mins. Approximately 25 mins |
| Naming minerals | 5 mins |
| As a class going over the mineral names | 5 mins |
| Wrap-up | 5 mins |

**Safety issues:**

Hydrochloric acid should not be swallowed.

**Prelab questions/ postlab questions:**

Pre-lab discussion outline:

Powerpoint will run through the basics of what a mineral is and what physical properties can be used to distinguish that mineral.

Post-lab discussion:

Which mineral was the hardest to identify? Why?

Which minerals was the easiest to identify? Why?

Which physical property was the most useful in identifying minerals? Why?

Which physical property was the least useful in identifying your minerals? Why?

**Lab set up:**

Students will work in groups of two. There will be 4 stations. Each station will have either 3 or 4 minerals. They will be given 5-7 minutes to look at minerals and collect their data.

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