

Lab Directions:

- Please complete the pre lab questions first.
- Follow the procedure direction carefully.
- While doing the lab, write down your findings in the data table provided to you.
- Please make sure to put the rock samples back into the bin in which they were taken from!!

Question:

How are we able to identify a rock specimen's type as well as common name?

Introduction:

Geologists recognize that rocks form under a variety of conditions, and it has been established that each type of rock has its own mode of origin. The three basic types of rocks are igneous, sedimentary and metamorphic. Igneous rocks are formed when molten material from the earth called magma cools either above or below the earth's surface. Sedimentary rocks form near or in water and are often made from fragments of other rocks or organic material. The minerals found within the water and the pressure caused by the burial of sediments allow for the formation of these rocks.

Metamorphic rocks start off as a parent rock and go through great amounts of heat and pressure from either the movement of the earth's crust or the movement of magma beneath the earth's crust.

Pre-Lab Questions:

1. Explain what conditions each type of rock (igneous, sedimentary and metamorphic) needs to properly form. **(3)**
2. Create a chart like the one found below and list all of the identifiable characteristics that can be used to identify each type of rock. Please list as many identifiable factors as you can for each rock type. **(9)**

	Igneous Rocks	Sedimentary Rocks	Metamorphic Rocks
Identifiable Characteristics:			

Please look to backside of page for rest of lab!



Materials:

- Lab Worksheet
- Rock specimens
- Magnify glass
- Hydrochloric acid
- Laptops
- Rock wheels
- Identifying sedimentary and metamorphic rock sheet
- Types of rocks chart (graphic organizer completed in class)

Procedure:

1. Please collect a sample bag of rocks from your group's designated station, it does not matter which bag you start with, just ensure you look at all bags provided. Make sure to only take bags from your group's station and ensure that all rocks go back into the bins they came from as well as each bin is returned to its own station.
2. Work as a group to identify first the type of rock (igneous, sedimentary or metamorphic) and then what the common name is for that rock. To do this please use the information given to you to assist you (rock wheel, identifying sedimentary and metamorphic rocks sheet and the website found at:
http://www.classzone.com/books/earth_science/terc/content/investigations/es0610/es0610page02.cfm all of your findings will be put on the lab worksheet.
3. Once you have finished naming the rocks in your bag, go and collect a different bag from your station and complete the same steps. Make sure to put your findings on your worksheet.

Analysis Questions:

1. The sedimentary rock, Limestone will often contain geodes (spheres of silica rock that are completely filled with crystals. With what we know about crystals that form in igneous rocks explain how and what would be needed to allow for crystals in geodes to form. **(2)**
2. Explain how a sculpture made of marble would be affected by acid rain. **(2)**
3. Why would it be that sedimentary rocks have non-interlocking mineral grains and igneous and metamorphic rocks would have interlocking mineral grains? Think about how they are formed. **(2)**
4. Using the "identifying metamorphic rocks" chart, explain a possible life of a piece of shale rock. Make sure to indicate what the parent rock is and how it changes types. **(2)**