

Name _____

SEDIMENTARY ROCK LAB

Question: What methods can we use to identify sedimentary rocks?

Background Information:

- **Sedimentary** rocks are formed from weathered rock particles
- There are 3 types of sedimentary rocks: **detrital**, **organic**, and **chemical**.
- First, you need to determine the **texture** of the rock before you can determine its **origin**.

Sedimentary Rock Textures:

- **Grain size** plays an important part in determining the texture
Sizes can be:
 - Coarse**--particles larger than pebble size > 2 mm
 - Medium**--sand sized like granulated sugar 1/16 to 2 mm
 - Fine**--individual grains are too small to be visible < 1/16 mm
- Sedimentary rocks that contain the mineral calcite will fizz or **effervesce** in the presence of hydrochloric acid (HCl)
- Rocks can be **clastic** or non-**clastic**
- Non-clastic rocks are usually crystalline
- Clastic rocks are made of individual particles of sediments but most of the time, are too small to be seen with the naked eye.
- Clastic simply means broken rock

Sedimentary rock types:

- **Detrital**
 - Made of individual particles, skeletal remains or broken fragments of previously existing rocks
 - Particles are cemented together by other minerals
- **Organic**
 - Formed directly or indirectly from once – living materials
- **Chemical**
 - Formed when a sea or lake dries up

- Large amounts of minerals are left behind when the water evaporates

Materials: 10 sedimentary rocks in tray
Hand lens

Procedures: examine each of the rocks, observe their properties, and determine the type of sedimentary rock.

Data:

Rock #	Grain Size: Coarse Medium Fine Crystalline	Texture: Clastic Non-Clastic?	Fizzes in Hydrochloric acid	Type of Rock Organic? Chemical? Detrital?	Name of Rock
1			Yes		
2			No		
3			No		
4			No		
5			No		
6			No		
7			Yes		
8			No		
9			Yes		
10			No		

Conclusions: Use notebook paper, and write in complete sentences.

1. Which rocks seem to be created by the cementation process? (3 clastic rocks)
2. Which rocks seem to be organic in nature? (1 clastic /1 nonclastic)
3. Which rocks seem to be created by the compaction process? (3 clastic)
4. Which rock would you expect to be used as a fuel source or source of energy? (1 nonclastic)
5. Which rocks can you really see the strata or layers easily? (1 clastic/1 nonclastic)
6. Which rocks seem to be made by chemical means? (either precipitation or evaporation) hint: which ones have not been used yet?
7. How are shale and mudstone / siltstone similar?
8. How are shale and mudstone / siltstone different?
9. What processes help to create sedimentary rocks? (6 ways)
10. Essay question:
Explain how a river or stream carries the different sizes of sediments down a river. What happens as the river slows down? What effect does the river have on the shape of rock fragments as it is moved down the river?