

## Classifying Sedimentary Rocks

### Problem

What are the characteristics of sedimentary rocks?

### Materials

- Seven sedimentary rocks.
- Magnifying glass

### Procedure

- Examine each rock sample. Determine its texture, grain size, and other useful information to aid in its identification.

### Conclusions

- Use page 7 of your ESRTs to determine the identity of the rock samples. Enter the indicated information in the appropriate row of the Data Table and name the sedimentary rock (see the example (EX)).

### DATA TABLE

Rock #	Clastic (C), Chemical (Ch) Bioclastic (O)	Grain Size	Composition	Comments	Rock Name	Symbol
Ex.	Ch	varied	Dolomite	crystals from precipitate or evaporite.	Dolostone	
1						
2						
3						
4						
5						
6						
7						

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### **Critical Thinking and Application**

1. Describe the process of the formation of a clastic sedimentary rock.
2. Define: "Compaction" and "Cementation".
3. Why do clastic sedimentary rocks generally form underwater?
4. Describe the pattern clastic sedimentary rocks exhibit after formation of several layers.
5. What are the differences between clastic, chemical and organic sedimentary rocks?

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6. Describe the process of the formation of a precipitate.

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7. Describe the process of the formation of a evaporite.
8. What are often found in sedimentary rocks and not in either igneous or metamorphic rocks?

Name \_\_\_\_\_

## Sedimentary Rocks

### A. Weathering and Erosion

- A. \_\_\_\_\_ is the breakup of rock
- B. \_\_\_\_\_ is the transporting of rock by water, wind, glaciers, gravity

### B. How rocks are classified?

- A. Rocks are classified by how they form (What is their origin?)
- B. Metamorphic Rocks-Heat and Pressure
- C. Igneous Rocks-Melting and Solidification of magma or lava
- D. Sedimentary Rocks-Weathering, Erosion, Deposition, Compaction, Compression, Lithification of sediments

### C. Types of Sedimentary Rocks

- A. \_\_\_\_\_ -Fragmental
- B. \_\_\_\_\_ -Organic
- C. \_\_\_\_\_ -Crystalline

### D. The Process-Clastic Sedimentary Rocks

- A. Rocks are broken down (weathered) and then transported (erosion)
- B. Clastic means rocks made of other rock fragments called clasts (fragmental)
- C. Rock fragments, dirt, soil are called \_\_\_\_\_
- D. Layers!!!! of broken down rock piled on top of each other (deposition)
- E. Compression (pressure) occurs due to the overlying weight of the sediment
- F. \_\_\_\_\_ (closeness of particles)
- G. Glue or lithification or cementation- Stick themselves to each other
- H. Clastic rocks are most common type of rock and found only at the surface of earth
- I. Rocks form a thin veneer or layer around the planet

### E. Clastic Rocks

- A. Organized by \_\_\_\_\_
- B. Largest to Smallest (Conglomerate, Breccia, Sandstone, Siltstone, Shale)

### Certain Features Only Found in Sedimentary Rocks

- A. Mudcracks, Ripple Marks, Layers, Fossils,

### F. The Process-Organic Sedimentary Rocks

- A. Also called \_\_\_\_\_
- B. Organized by composition
- C. Coal and Limestone are very good examples!

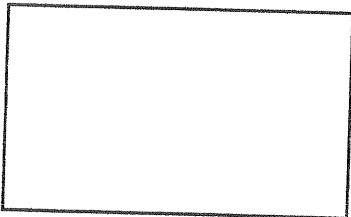
### G. The Process-Chemical Sedimentary Rocks

- A. Also called \_\_\_\_\_ Rocks
- B. Evaporation
- C. Precipitation of Seawater
- D. Organized by composition \_\_\_\_\_

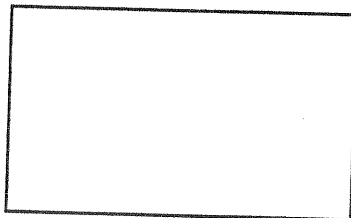
**Sedimentary Rock Chart**

1. What is the texture of sandstone? \_\_\_\_\_
2. What does the term Clastic mean? \_\_\_\_\_
3. What is the grain size for the silt that makes up a siltstone? \_\_\_\_\_
4. What is the texture of coal? \_\_\_\_\_
5. How are clastic rocks classified? \_\_\_\_\_
6. How are chemical and organic rocks classified? \_\_\_\_\_
7. What is another name for a chemical sedimentary rock? \_\_\_\_\_
8. What is another name for an organic sedimentary rock? \_\_\_\_\_
9. What is the difference between conglomerate and breccia?  
\_\_\_\_\_
10. What is the composition for all clastic rocks (siltstone, sandstone, conglomerate and breccia)  
\_\_\_\_\_
11. What does the term monomineralic mean and name one rock on the chart that fits this category? \_\_\_\_\_
12. Why is limestone both organic and chemical?  
\_\_\_\_\_
13. What is coal made of? \_\_\_\_\_
14. What is an evaporite? \_\_\_\_\_
15. What is a precipitate? \_\_\_\_\_
16. What is the composition of rock salt? \_\_\_\_\_
17. List the 4 chemical sedimentary rocks:  
\_\_\_\_\_
18. Draw the symbols for:

Shale



Limestone



Siltstone

