Geology
Lancaster High School

Name
Date
Block

Sedimentary Rock Identification

Introduction

Rocks derived from pre-existing rocks through the process of erosion, followed by compaction, or chemical precipitation are called sedimentary rocks. Sedimentary rocks are grouped in three categories: Clastic, chemical and organic. *Clastic* rocks, also known as *detrital* rocks, are formed by mechanical weathering. Weathering produces gravels, sands and silts, which are then cemented together by natural cements such as silica, iron oxides, and various carbonates to form clastic rocks. In the process of weathering, rocks or parts of rocks may be dissolved. As the solution cools or evaporates the solid portion is deposited as precipitate. Rocks formed in this way are referred to as *chemical* sedimentary rocks. Rocks which are formed from the compaction and cementation of plant or animal remains are termed *organic* rocks.

There is a large variety of sedimentary rocks but approximately 98% of all sedimentary rocks are composed of shales, sandstones, and limestones. Shale is the main weathering product of the feldspars which are the most abundant of the minerals.

Using this information you will begin to classify and name the various samples of sedimentary rocks. This process can be applied to other rocks and samples you pick up and add to your own collection.

Materials

For this experiment you will need several sedimentary rock examples to identify and the classification chart for sedimentary rocks. You may choose to use a hand lens and/or a microscope to view the sediments.

Procedure

Refer to the handout Classification of Sedimentary Rocks to help you fill out the data table for each of the samples given to you by your teacher.

DATA TABLE

Sample #	clastic, chemical or evaporite	grain size and shape	Layering or banding present?	Composition	Rock Name
1					
2					
3					
4					
5					
6					

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Sample #	clastic, chemical or evaporite	grain size and shape	Layering or banding present?	Composition	Rock Name
7					
8					
9					
10					
11					
12					
13					
14					
15					

Analysis and Conclusions

Match the terms on the right to the numbered responses on the left.

_____ 1. A rock with angular gravel sized particles.

_____ 2. Jasper and agate are examples of this type of rock.

_____ 3. Limestone with an inorganic origin.

_____ 4. Feldspar-rich sandstone.

_____ 5. Limestone composed of shell fragments.

_____ 6. An evaporite rock rich in the mineral halite.

_____ 7. A clastic or detrital rock rich in silt and clay-sized particles.

_____ 8. A rock with rounded gravel sized particles.

a. travertine
b. chert
c. breccia
d. shale
e. coquina
f. arkose
g. rock salt
h. conglomerate

9. The two most common minerals in detrital sedimentary rocks are _____ and _____.
10. Probably the single most common and characteristic feature of sedimentary rocks is _____.