

Name \_\_\_\_\_ hr \_\_\_\_\_

Information: The tendency for currents of air or water to separate sediments according to size is called **sorting**. Sediments can be well sorted, poorly sorted, or somewhere in between. In well-sorted sediments, all of the grains are roughly the same size and shape. The sorting of the sediment is the result of changes in the speed of the air or water that is moving it. Sorting is also affected by the distance sediments have been moved by air or water. Generally the farther they travel, the more sorted they become. Gravity and the buoyant forces of water also affect sorting, causing larger gravel sediments settle out first, followed by sand, then silt, and finally clay. If these sediments are later compacted, they can form clastic sedimentary rocks.

**Procedure Day 1:**

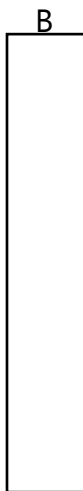
- A. obtain three test tubes
- B. Label them A, B, and C
- C. Fill each test tube 1/2 full with the soil mixture
- D. Now, slowly add water until the test tube is filled a finger’s width below the top
- E. Do not shake test tube A
- F. Take test tube B out of the rack, place your thumb over the opening, and give it 3 shakes.
- G. Take test tube C out of the rack, place your thumb over the opening, and shake it 10 times.
- H. Return all test tubes to the rack and leave overnight.

**Procedure Day 2:**

- A. Very carefully (without shaking) get your test tubes and complete the questions below

**Questions:**

- 1. Draw the sorting in each test tube. Label the silt, sand, clay, and gravel layers if possible. (3pts)



2. Which test tube shows:





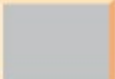
well sorted = \_\_\_\_

poorly sorted = \_\_\_\_

Moderately sorted = \_\_\_\_

3. What caused the differences in the sorting between the test tubes?

Refer to the chart below to answer the final questions.

<b>Clastic Sedimentary Rocks</b>				<b>Chemical Sedimentary Rocks</b>	
<b>Sediment Type</b>	<b>Sediment size</b>		<b>Rock Name</b>	<b>Composition</b>	<b>Rock Name</b>
Pebble (rounded)	> 2 mm		<b>Conglomerate</b>	Calcite (CaCO <sub>3</sub> )	<b>Chemical limestone</b>
Pebble (angular)			<b>Breccia</b>	Halite (NaCl)	<b>Rock salt</b>
Sand	1/16 to 2 mm		<b>Sandstone</b>	<b>Biochemical Sedimentary Rocks</b>	
Silt	1/16 to 1/256 mm		<b>Siltstone</b>	<b>Composition</b>	<b>Rock Name</b>
Clay	<1/256 mm		<b>Shale</b>	Calcite (CaCO <sub>3</sub> )	<b>Biochemical limestone</b>
				Plant remains	<b>Coal</b>

4. What clastic sedimentary rock(s) would you expect to form in test tube A and B?

5. What clastic sedimentary rock(s) would you expect to form at the top of test tube C?

6. What clastic sedimentary rock(s) would you expect to form near the bottom, above the gravel in test tube C?