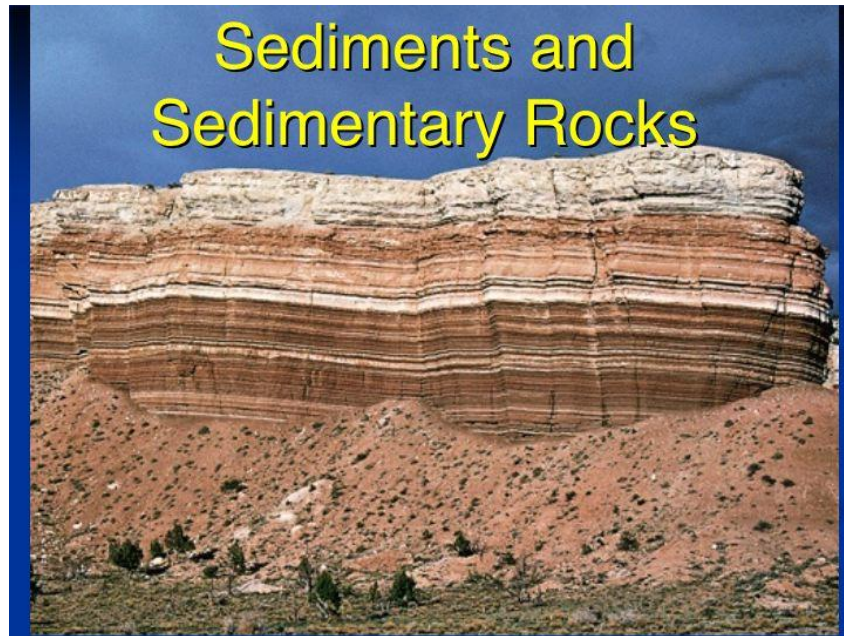


SEDIMENTARY ROCKS



When mountains are first formed, they are tall and jagged like the Rocky Mountains on the west coast of North America.

Over time (millions of years) mountains become old mountains like the Appalachian Mountains on the east coast of Canada and the United States. When mountains are old, they are rounded and much lower.

What happens in the meantime is that lots of rock gets worn away due to erosion. Rain, freeze/thaw cycle, wind and running water cause the big mountains to crumble a little bit at a time.

Eventually most of the broken bits of the rock end up in the streams & rivers that flow down from the mountains. Every minute of every day, rocks are being worn down by wind and rain. Tiny grains of dirt, sand, mud and clay are worn off and washed into streams, rivers, lakes and oceans.

When these tiny bits of sand and dirt settle to the bottom of the water, they are called sediment.

Minerals in the water and microscopic, or very tiny sea animals also get mixed in with the dirt and sand to form the sediment.

When the water slows down enough, these sediments settle to the bottom of the lake or oceans they run into. Every day more sediment piles on top of what is already there. After thousands and millions of years we end up with a really deep pile of sediment.

The weight and pressure from all the stuff on top turns the sediment on the bottom into sedimentary rock!

Think of each layer as a page in a book. One piece of paper is not heavy. But a stack of telephone books is very heavy & would squish anything that was underneath.

Over time the layers of sand and mud at the bottom of lakes & oceans turned into rocks. These are called sedimentary rocks.

Some examples of sedimentary rocks are sandstone and shale.

One thing that is special about sedimentary rocks is their stratification. Stratification means that it is made of layers.

Plants & animals that have died get covered up by new layers of sediment and are turned into stone. Sedimentary rocks have fossils in them.

Most of the fossils we find are of plants & animals that lived in the sea. They just settled to the bottom. Other plants & animals died in swamps, marshes or at the edge of lakes. They were covered with sediments when the size of the lake got bigger.

When large amounts of plants are deposited in sedimentary rocks, then they turn into carbon. This gives us our coal, oil, natural gas and petroleum. A large sea once covered the central part of Canada and the climate was very tropical. In time, sedimentary rocks formed there. That is why we find dinosaur fossils in Alberta and the area is a good source of natural fuels.

Sedimentary rocks cover 75% of the earth's surface. Most of the rocks found on the Earth's surface is sedimentary even though sedimentary rocks only make up less than 5% of all the rocks that make up Earth.

When rocks are exposed to the elements - air, rain, sun, freeze/thaw cycle, plants - erosion occurs and the little bits of rock worn away get deposited as sediments. Over time, these sediments harden as they get buried by more sediments and turn into sedimentary rocks. Sedimentary rocks are usually formed in layers called strata.



There are 6 main kinds of sedimentary rocks depending on the appearance of the rock.

1. **Conglomerate** rock has rounded rocks (pebbles, boulders) cemented together in a matrix.

2. **Sandstone** is a soft stone that is made when sand grains cement together. Sometimes the sandstone is deposited in layers of different colored sand.

3. **Shale** is clay that has been hardened and turned into rock. It often breaks apart in large flat sections.

4. **Limestone** is a rock that contains many fossils and is made of calcium carbonate &/or microscopic shells.

5. **Gypsum**, common salt or Epsom salt is found where sea water precipitates the salt as the water evaporates.

6. **Porphyry** rock is when jagged bits of rock are cemented together in a matrix.



Lots-O Layers

A Sedimentary Exploration

Ingredients

½ cup butter

1 ½ cups vanilla wafer crumbs

1 14oz. Can sweetened condensed milk

1 6 oz. Pkg. Chocolate chips

1 6 oz. Pkg. Peanut butter chips

1 cup chopped nuts

Materials

13x9 baking pan

can opener

oven

Cooking Directions:

Melt the butter in the baking pan

Sprinkle crumbs over the butter

Pour condensed milk evenly over the crumbs

Layer the remaining ingredients evenly over the top.

Press down gently. Bake at 350° 25-30 minutes or until lightly brown

Let cool. Cut into bars.

How are these like sedimentary rocks?