RED LAKE REGIONAL HERITAGE CENTRE visits.... Evolution MINING

Canadian Mining Week May 8-12 2023

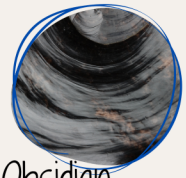
The question:

What is a rock?

A rock is a natural inorganic solid made with two or more minerals. Rocks are divided into three groups based on how they are made.

Igneous rocks are formed directly from magma (underground) where they cool slowly over a very long period of time, or lava (surface) where they are forced to cool very quickly.

Diorite (underground)



Obsidian (surface)

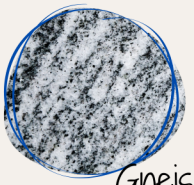
Sandstone

Shale

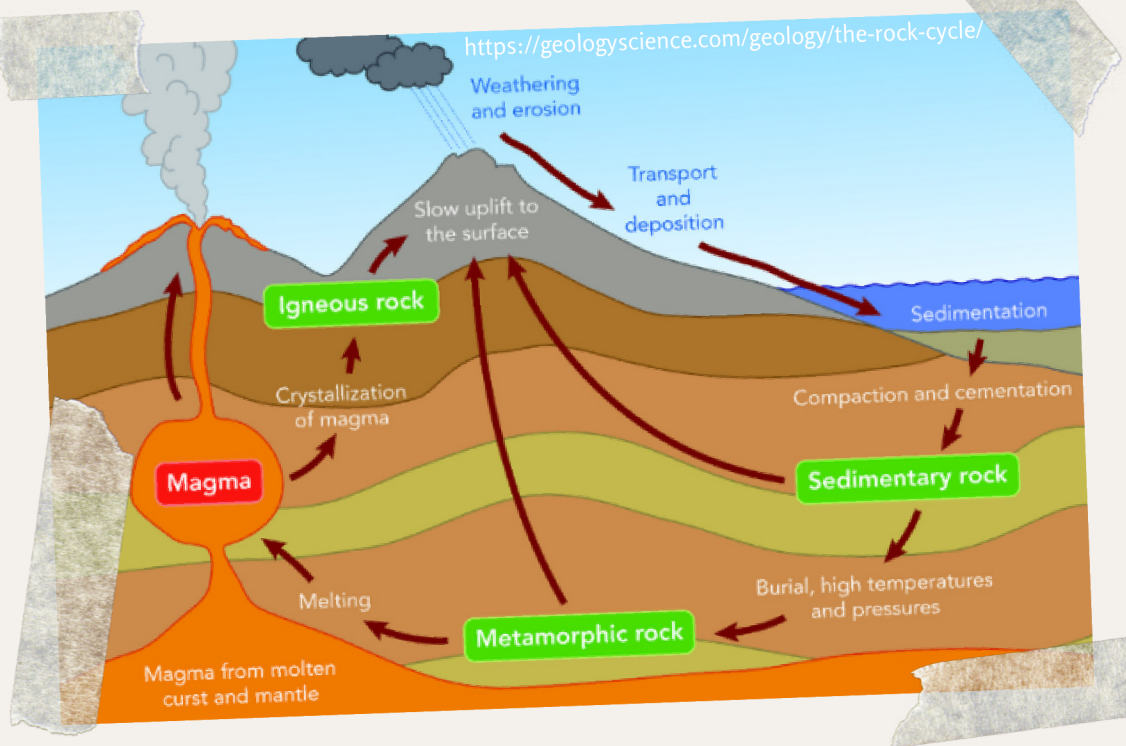
Sedimentary rocks form as eroded pieces of igneous rocks turn into sand, silt, and clay. These materials begin to build up in an area, sometimes mixed with organic matter, and with time and the weight of these materials, they lithify. That is, they turn into new sedimentary rocks.

Over time, rocks on the surface will eventually be pushed underground. With the addition of temperature, pressure, and time these can be transformed into metamorphic rocks.

Marble



Gneiss



The continual creation and transformation of rocks over time is known as the rock cycle.

It can take thousands or millions of years for rocks to change states in this cycle.

Let's try!

Dear adults: There is stove use in this activity, so make sure you stay nearby!

Recycle old crayons to see how different types of rocks form.

You will need:

- 2-3 crayons, or pieces to the same amount
- potato peeler, pairing knife, or cheese grater
- aluminum foil
- frying pan
- tongs or oven mitts
- toothpick
- small bowl
- ice water

Instructions:

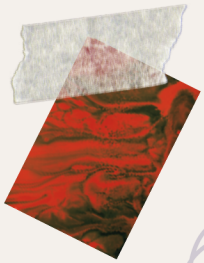
1. Peel the paper off your crayons and prepare them into shavings. Keep different colours separate.

2. Lay out a piece of tinfoil. Add crayon shavings in layers, use only one colour for each layer.
3. Fold the tinfoil over your crayon and then apply heavy pressure with a frying pan. You can even stand on it. The more pressure, the better.
4. Carefully pull the foil away and look at how the crayon has combined.

Sedimentary rock!
It forms with pressure.

5. Place your crayon "rock" back in the foil and place it inside the frying pan, and put on the stove on medium-low heat.
6. Remove the foil and set to cool as soon as all the wax has just started to melt.

Metamorphic rock!
It forms with pressure and heat.



7. Prepare a bowl of ice water.
8. Place your foil back onto the frying pan. This time, use a toothpick to stir it together as it melts.
9. When all the colours are mixed, use your tongs or oven mitts to quickly pour the wax into the bowl of iced water.

Igneous rock!
After melting into magma, it erupts as lava from a volcano before cooling rapidly.

Look at each "rock" as you make it. What's the same? What's different?

based on Model the Rock Cycle with Crayons https://www.sciencebuddies.org/stem-activities/crayon-rock-cycle