

Three Main Types of Rocks

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| Igneous Rocks | |
| Sedimentary Rocks | |
| Metamorphic Rocks | |

Igneous Rocks



Above and below: Basalt



Above: Gabbro



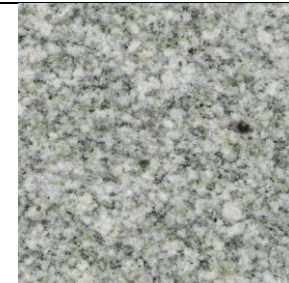
Above: Pumice



Above: Basalt, Giant Causeway in Ireland



Above: Obsidian



Above: Granite

Sedimentary Rocks



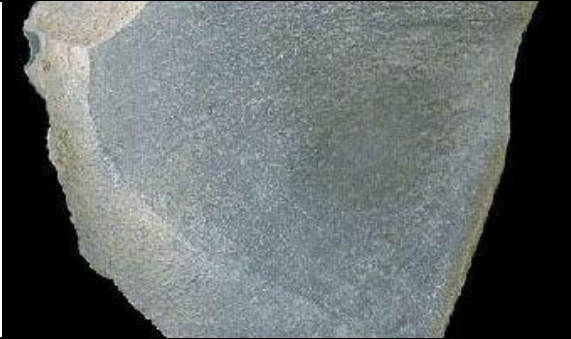
Above: Conglomerate Rock



Above: Limestone



Above: Sandstone



Above: Shale

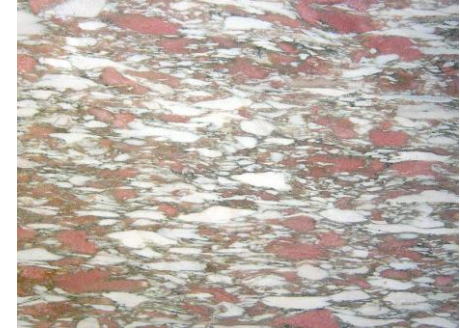
Metamorphic Rocks



Above: Schist



Above and Below: Gneiss



Above: Marble



Above: Slate



Above: Quartzite

Three Main Types of Rocks

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|----------------------------|--|
| <h2>Igneous Rocks</h2> | <p>Rocks that form when melted rock hardens are called igneous rocks.</p> <p>Lava cools and hardens before large mineral crystals have time to form. Rocks formed from lava have small mineral pieces and are called fine-grained.</p> <p>Melted rock that stays below Earth's surface is called magma. Magma cools and hardens slowly. Its minerals can form large grains that are easy to see. Igneous rocks formed from slowly cooling magma are called coarse-grained.</p> |
| <h2>Sedimentary Rocks</h2> | <p>Material and weathered rock pieces drop to the bottoms of stream, rivers or lakes forming a sediment. Over time, layers of sediments can form sedimentary rock as they are squeezed and stuck together.</p> |
| <h2>Metamorphic Rocks</h2> | <p>High heat and pressure can change the texture of rock. It looks and feels different. They can also change the form of the minerals that make up the rock. These changed rocks are called metamorphic rocks.</p> |

Igneous Rocks - Possible Answers

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|--|---|--|
|  |  |  |
| <p>Above and below: Basalt</p> <p>*the most common type of igneous rock that forms from lava at the Earth's surface. Basalt is a dark, greenish rock made mostly of feldspar and pyroxene.</p> | <p>Above: Gabbro</p> <p>Gabbro is an igneous rock also made of feldspar and pyroxene. It forms inside the Earth rather than at the surface. Gabbro has larger mineral grains than basalt.</p> | <p>Above: Pumice</p> <p>Pumice is an igneous rock. The tiny holes in pumice are caused by gases escaping from lava as it cools</p> |
|  |  |  |
| <p>Above: Basalt, Giant Causeway in Ireland</p> | <p>Above: Obsidian</p> <p>Obsidian forms from lava that cools so quickly that the rock looks like black glass.</p> | <p>Above: Granite</p> <p>Granite forms when magma cools slowly beneath the Earth's surface. Most granite is made of feldspar, quartz and mica. These mineral grains are joined together tightly.</p> |

Sedimentary Rocks-Possible Answers



Above: Conglomerate Rock

Conglomerate is a type of sedimentary rock that can form from larger pieces of sediment/weathered rock, etc. The pieces in a conglomerate can be as big as boulders or as small as peas.



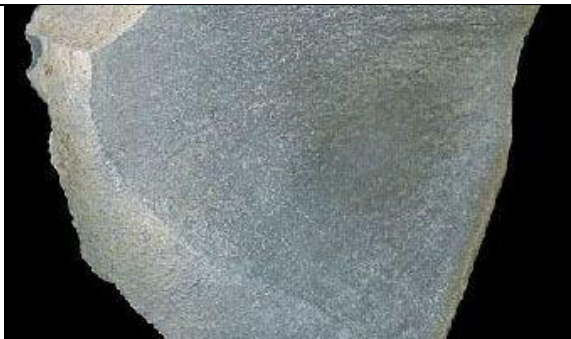
Above: Limestone

Limestone is a fine-grained sedimentary rock made mostly of the mineral calcite. Most limestone forms in oceans, sometimes from seashells.



Above: Sandstone

Sandstone is a sedimentary rock that are made of bits of rocks and minerals the size of sand grains. Nearly all sandstones are made up mostly of quartz.



Above: Shale

Shale is a fine-grained sedimentary rock made of very, very small sediments.

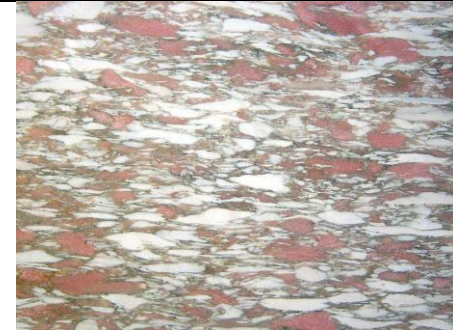
Metamorphic Rocks-Possible Answers



Above: Schist
Mica schist sigmoidally sheared and intruded by Harvey Peak granite, 1.6 billion years ago. At Mount Rushmore.
Schist has wavy lines. It splits easily into layers.



Above and Below: Gneiss
Gneiss forms when schist is heated and squeezed more. It often has bands of light and dark minerals.



Above: Marble
Marble is another metamorphic rock that forms when limestone is squeezed and heated. It's often used in buildings.



Above: Slate
Slate is a metamorphic rock that forms when shale is under great pressure. Slate has layers.



Above: Quartzite
Quartzite forms from sandstone when heat melts the sand grains together. It usually has a milky color.

Our rock 'experiments'

We had different types of chips: white chocolate chips, semi-sweet chocolate chips, peanut butter chips plus shaved coconut and heath crunch bits.

Igneous Rocks: We melted some white chocolate (and red dye) on the stove. We talked about how magma/lava is melted rock. Then we took spoonfuls of the melted chocolate and let it cool on a baking sheet. These were our 'igneous' rocks.



Sedimentary Rocks: We hammered the chips in a ziploc bag. We put spoonfuls of the different types of chips into a jar. Those were the sediments. We applied pressure to squeeze the rock/chocolate layers together to create sedimentary rocks:



Metamorphic Rocks: We put layers of chocolate chips and mini-marshmallows into a pan that could be baked in the oven. We put the pan in the oven and let it heat up for 10 or 15 minutes. We took it out, let it cool for a few minutes and then applied pressure to the top of half the mixture. This transformed the "rocks/chips" into a new concoction whereas on the other side we could see distinct layers and distinct rock forms (like sedimentary rocks).

After it cooled we cut the "rock" up and looked at the layer, noticing how on the metamorphic side the "rocks" had blended into one another.



Next Day Follow-up: Explain what we did for each of our activities below?

