

Rock Cycle

November 17, 2014

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What is a Rock?

- A **rock** is a natural piece of the solid Earth usually composed of one or more **minerals**.



2

Compare

Rocks	Both	Minerals
Does not have a definite chemical composition	solids found in the Earth's crust	Has a definite chemical composition
No defined crystalline structure		Has a defined crystalline structure
Example: Granite, Sandstone		Example: Gold, Quartz

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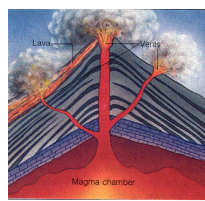
Types of Rocks

- There are three main types of rocks:
 - Igneous** : Rock formed by the cooling and hardening of molten rock (magma or lava).
 - Sedimentary** : Rock formed by the compression and cementation of particles of sediment.
 - Metamorphic** : A sedimentary or igneous rock that has been changed in texture or composition by heat or pressure, or both, without melting.
- Each of these types of rocks are formed in different ways and each type of rock can be changed into each of the other types of rock.
- Rock Cycle** is the continuous, dynamic set of processes by which rocks are changed into other types of rock.
- Essentially the rock cycle is the process that **makes** and **recycles** rocks.

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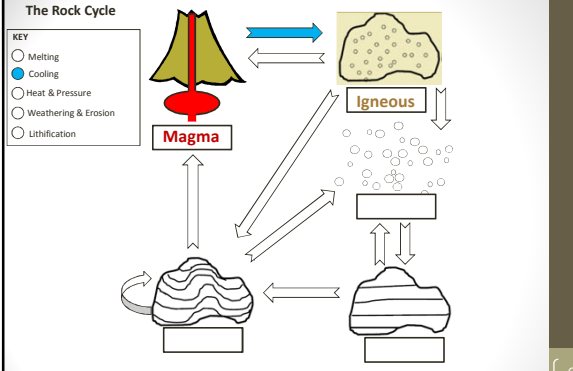
Magma vs. Lava

- Most rocks on earth began as igneous rocks. Let's trace a possible rock cycle for newly formed igneous rocks.
- Igneous rocks are formed from magma.
- Magma** : Molten material found **beneath** Earth's crust
- Lava** : Magma that flows out onto Earth's **surface**



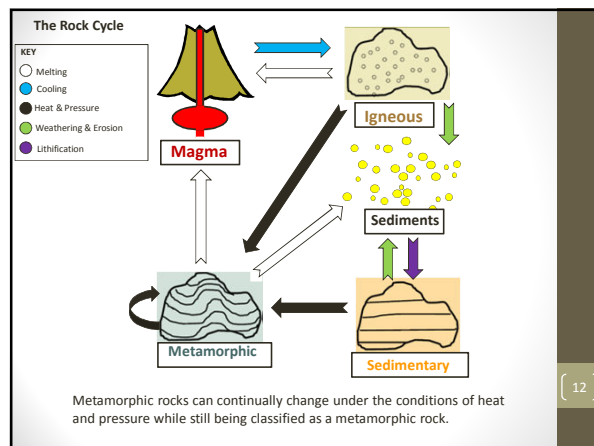
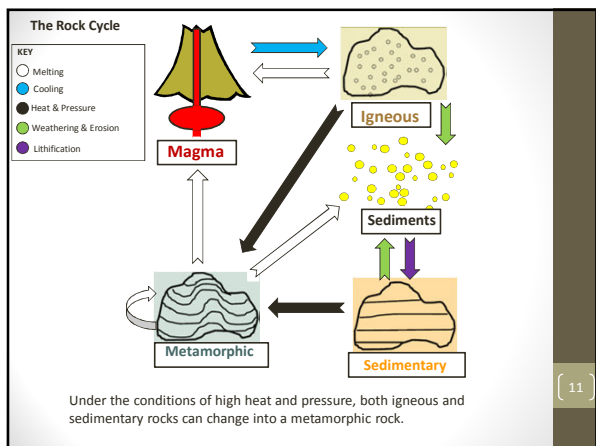
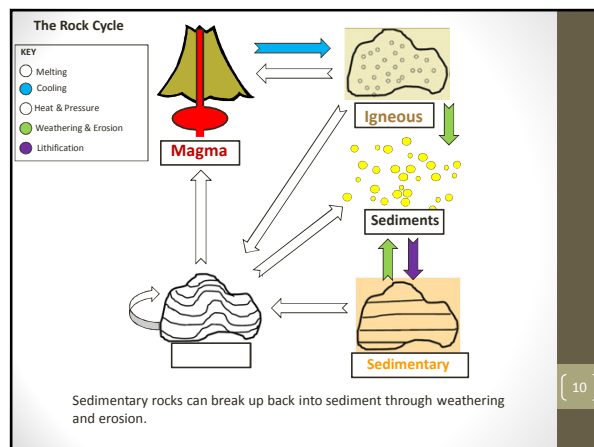
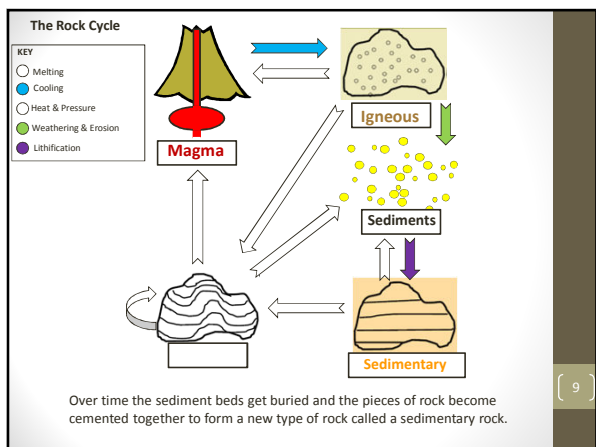
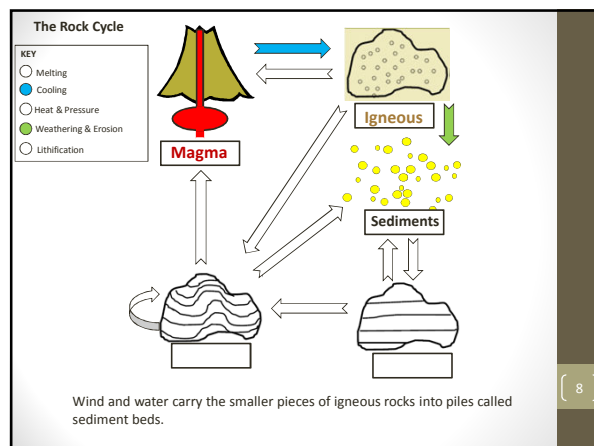
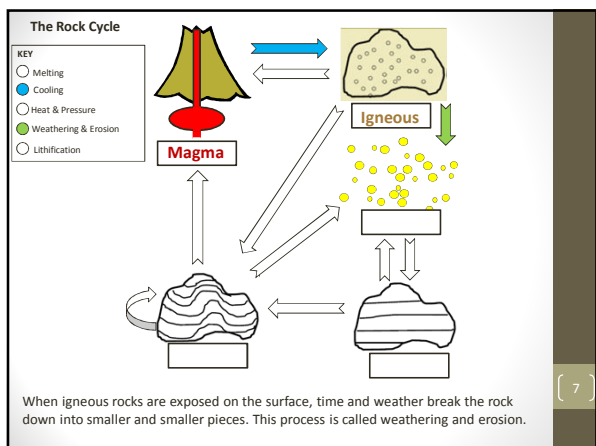
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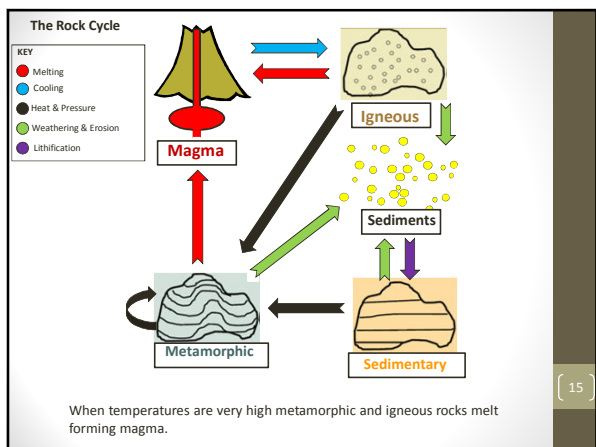
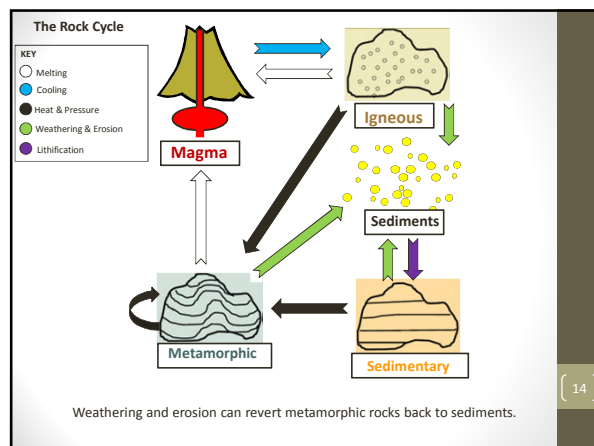
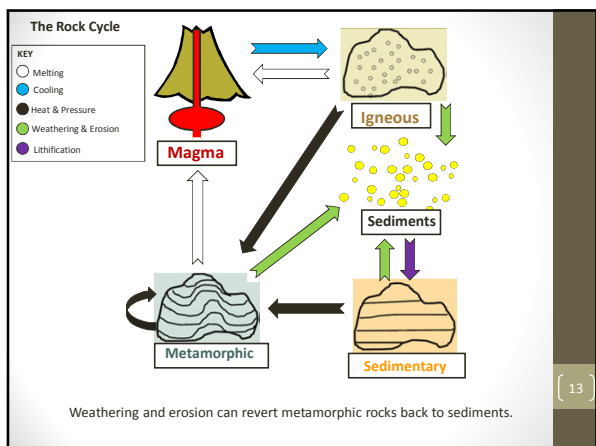
The Rock Cycle



Magma cools and solidifies into rock.


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More on Sediments


- As rivers carry dust, pebbles, and rocks downstream, this material is eventually deposited at some location further down.
- These deposits form at bends in a river, as well as in locations where rivers dump water into lakes, seas, and oceans.
- Deposition** occurs when sediments are laid down on the ground or sink to the bottom of a body of water.



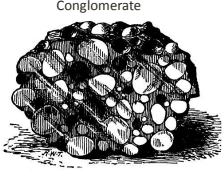
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More on Sedimentary Rocks

- Bedding** : arrangement of sedimentary rocks in strata
- Strata** : Layers or beds of rock, usually sedimentary
- Conglomerate** : A sedimentary rock composed of cemented gravel, pebbles, or cobbles.



Bedding & Strata

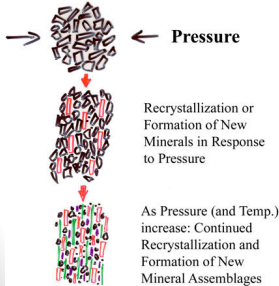


Conglomerate

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More on Metamorphic Rocks


- Foliation** : The alignment or segregation of minerals in a metamorphic rock, giving it a layered wavy appearance.



← Pressure

Recrystallization or Formation of New Minerals in Response to Pressure

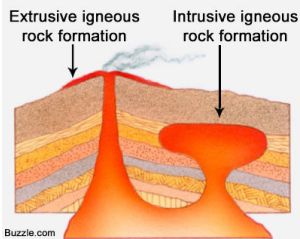
As Pressure (and Temp.) increase: Continued Recrystallization and Formation of New Mineral Assemblages



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More on Igneous Rocks

- **Extrusive Igneous Rocks** : Rocks formed from lava that solidifies quickly at Earth's surface.
- **Intrusive Igneous Rocks** : Rocks that crystallize slowly inside the Earth.



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Computer Lab Tomorrow!!

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Helpful Textbook Pages: [121 – 127](#)

Today's Main Idea

- Rock cycle is the process that makes and recycles rocks by weathering, heat and pressure, deposition, foliation and bedding.

Explore Question

2. Explore today's main idea with this question:
Why do sediment deposits tend to form layers?

Vocabulary

- None

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