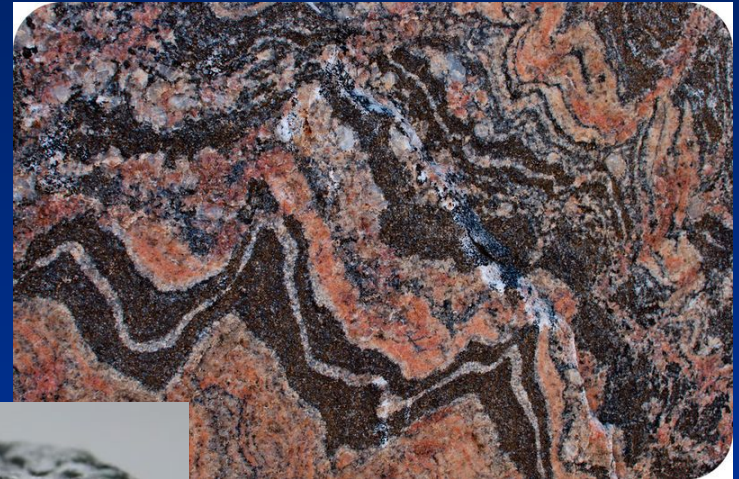


Igneous, Sedimentary & Metamorphic Rocks

Sedimentary-sandstone



Metamorphic- gneiss



Igneous- diorite



1. What is a Rock?

- Naturally Occurring (not man made)
- Solid
- Mixture of minerals other organic matter



2. What makes a rock different from a mineral?

Rock	Both	Mineral
Made of one or more minerals	Solid	Made of one type of element
Random crystal or no crystal structure	Naturally Occurring	Orderly crystal structure
	<p>←Granite=</p> <p>Quartz+ Feldspar+ Muscovite</p>	  

Igneous Rocks



3. Magma & Lava form different types of igneous rock

- Igneous rock is classified by where rock forms

Intrusive vs. Extrusive

forms when magma
cools in the earth

forms when lava
cools on earth's surface



Intrusive Vs. Extrusive



Diorite



Granite



Basalt



Andesite



Pegmatite



Gabbro





Rhyolite



Scoria

4. Igneous Rocks: Crystal size & Cooling Time

	Location of Rock	
	Intrusive (in earth)	Extrusive (earth surface)
Crystal Size	Large crystals	Small crystals
Picture	 <small>© geology.com</small>	 <small>© geology.com</small>
Cooling time	Longer cooling time	Shorter cooling time



Sedimentary Rock



5. Some rocks form from rock particles

- Sediment= materials that settles out of water or air
 - Materials can be:
 - tiny pieces of rock
 - broken minerals
 - pieces of plants and animal remains

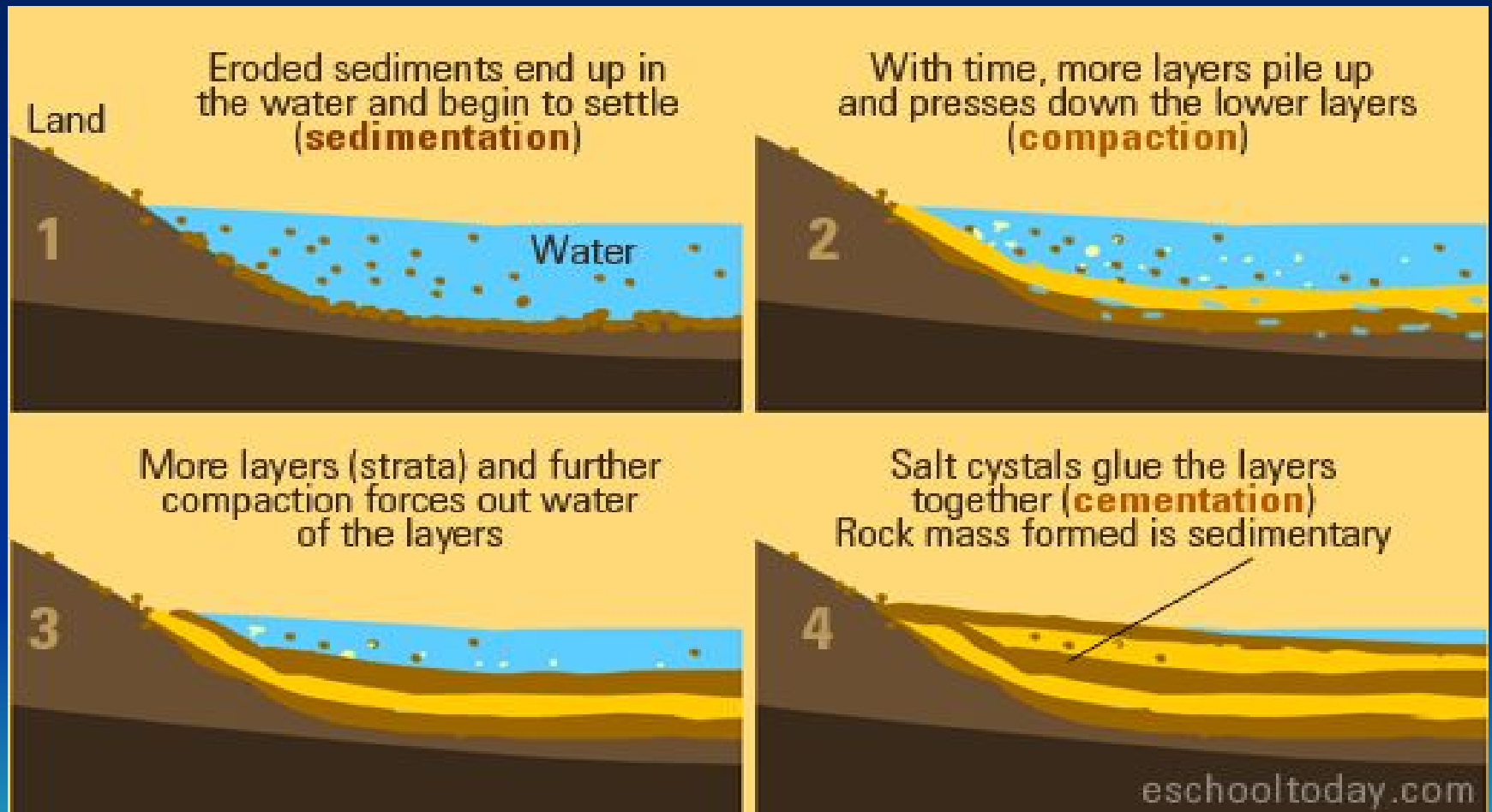


6. How do sedimentary rocks form?

- Sediments pile on top of each other on land or in water
- As sediments pile, they become compacted and cement together



Sedimentation Process



Sedimentary rock layers



<http://www.thejoysofsimplerlife.com/>

Rock layers



7. Some rocks form from plants or shells

- Coal- created from plant remains (dead wood, bark, leaves, stems, and roots)
 - The coal we use today started forming millions of year ago in swamps
- Limestone- created from the shells and skeletons of ocean organisms

Can you see the plant remains?



Limestone formation



Metamorphic Rocks



8. Metamorphic Rocks

- Heat and pressure change rocks
 - The original rock is called the parent rock
 - The new rock formed is called the metamorphic rock
 - Heat and pressure change the structure of the parent rock and their minerals recrystallize



9. Examples of Metamorphic Rocks

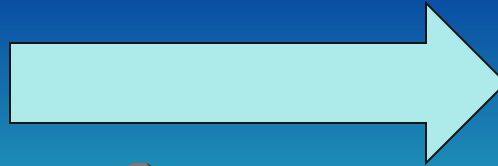
Parent Rock= Shale



Metamorphic Rock = Slate



Increase Temp. & Pressure



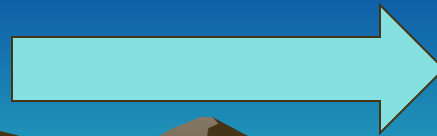
Examples of Metamorphic Rocks

Parent Rock = Limestone

Metamorphic Rock = Marble



Increase Temp. & Pressure



Examples of Metamorphic Rocks

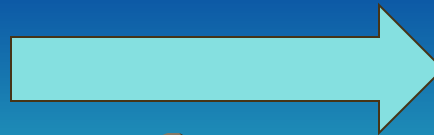
Parent Rock = Mica



Metamorphic Rock = Phyllite



Increase Temp. & Pressure



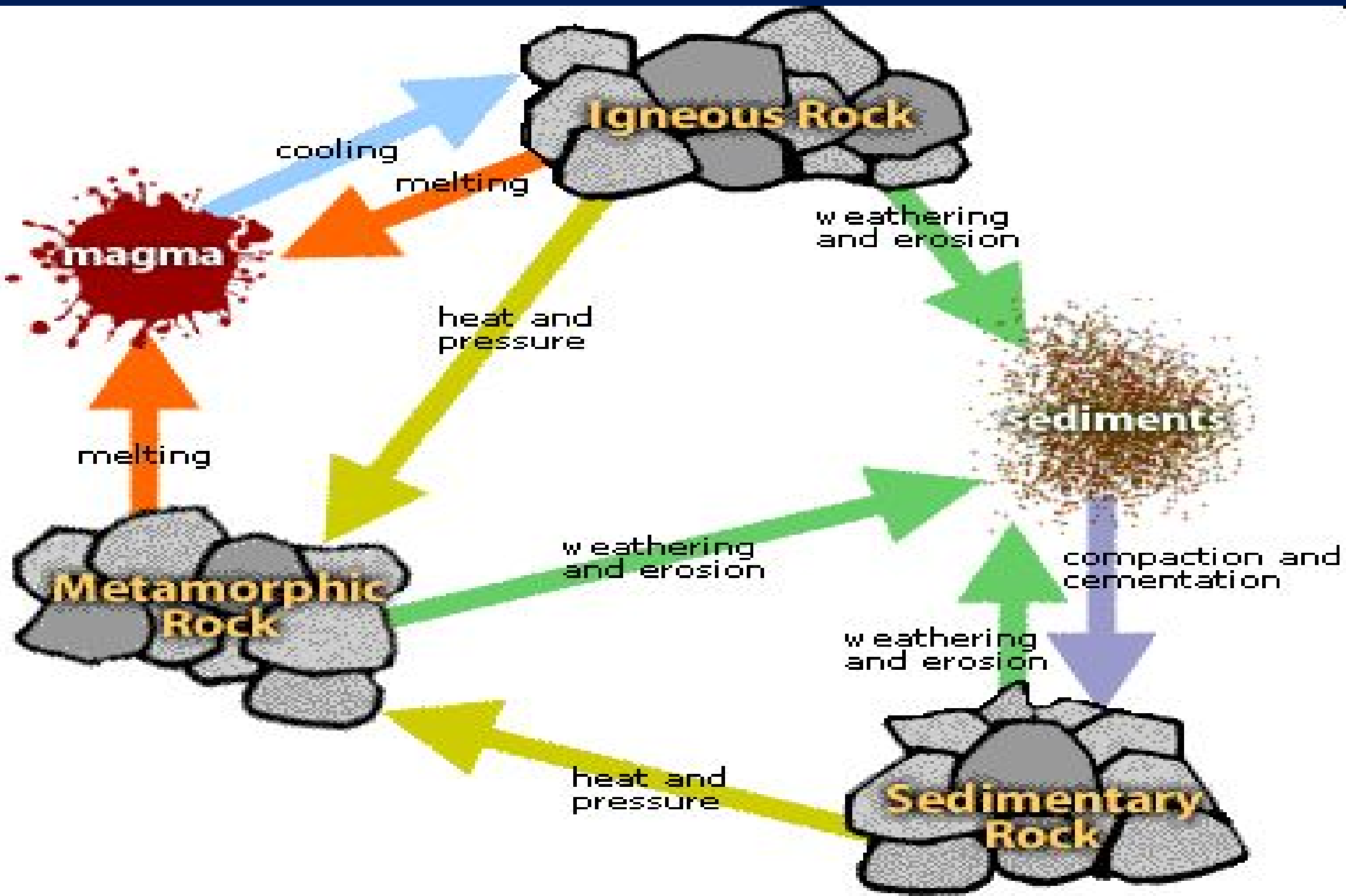
10. When a rock forms does it stay that way forever?

NO!!!!!!

- Rocks are always changing by processes like:
 - Weathering
 - Erosion
 - Compaction
 - Melting
 - Cooling
 - Cementation



11. Rock Cycle



Rock Cycle animation

The Rock Cycle

