The Rock Cycle Guided Notes Name:

Rocks don’t form into the three types of rocks and stay there. The Earth is constantly and in motion. The rock cycle demonstrates how a rock can start out as one type and change into another.

The three types of rocks : , ,

Interactions among Earth’s , , , things can cause rocks to change form one type to another.

The continuous processes that cause rocks to change make up the .

Changes in rock occur over periods of time.

**Igneous Rocks**

* **Magma**:
* **Lava**:
* **Intrusive Igneous Rocks**: rocks that form when hardens under the Earth’s surface
	+ **CLICK** on “intrusive.” Since magma is less than surrounding rocks, it slowly moves towards the surface. As it rises, it cools allowing to combine and form
	 crystals and grains easily seen.
* **Extrusive Igneous Rocks**: lava is similar to magma, except in lava most of the have escaped. When lava cools and hardens, it forms crystals that make up fine grained rocks. **CLICK** “extrusive” igneous rocks. Then **CLICK** on “lava flow”, “pyroclastic flow”, and “magma chamber”

**Sedimentary Rocks**

* Any rock at Earth’s surface will undergo weathering. Weathering is a process in which rocks are and broken down by water, air, and living things. The weathered pieces of earth material are called . **CLICK** on “weathering” and view both animations.
* Sediments are moved and eroded by , , , or . Eventually, the sediments are and to form sedimentary rocks. The four agents of erosion create different landscapes. **CLICK** on “landscapes”
	+ What landscapes does wind erosion create?
	+ What landscapes does glacial erosion create?
	+ What landscapes does water erosion create?
* Wave erosion (the often forgotten 5th agent): if waves erode a cliff from two sides, the erosion produced can form an .
* Glacial erosion: forms valleys, parallel scratches, and in the bedrock. Rock becomes . Sediments are , the mass of snow picks up sediment of any and and moves the sediment to another location (erosion and deposition)
* Gravity erosion: What is the shape of the valley?
* **Deposition**: when an agent of erosion loses energy, it drops the sediment. **CLICK** on “deposition.”
	+ What sediments make it farthest from the shore?
	+ Largest sediments are dropped first, followed next by the smaller sediments like
* **Burial**: as sediments are dropped, they bury other sediments, this creates a overtime similar to what you see at the Grand Canyon.
* **Lithification**: compaction and cementation, caused by the increasing sediment .
	+ **Compaction**:
	+ **Cementation:**
* **Features**: clues to how, when, and where the rock formed. In undisturbed sedimentary rocks, the oldest layers are found at the , and youngest layers are found at the . Provide clues about the over time. Mud cracks and ripple marks can indicate periods as well as formations along beaches or streams, records are present.

**Metamorphic Rocks**

* Extreme and cause rocks to change
* Heat: most important agent for metamorphism, provides required for chemical ractiosn to occur. Heat comes from two sources: ,and
* Pressure (Stress): with depth. Increases in temperature and pressure cause rock to flow rather than . Under these conditions, mineral grains will flatten and elongate.
* Classified according to and .
* Two types of texture:
	+ Foliated rock:
	+ Nonfoliated rock:
* **Regional Metamorphism:**
* **Contact Metamorphism:**

Source of Energy for Rock Cycle

* Processes driven by heat from Earth’s interior are responsible for the formation of both and rocks.
* Weathering and movement of sediments are driven by energy from the .
* Gravitational Potential Energy drives motion of erosion.

**CLICK** on “Animation Review” and work your way through the entire Rock Cycle.