

**Day 1-2**

**Examine the 3 rocks on your tray at your table**

**Touch, & feel the rocks**

**Write 3-5 characteristics of each rock**



**Rock #1**



**Rock #2**



**Rock #3**

**Some characteristics to describe for each rock:**

- **color**
- **luster (brightness & sparkle)**
- **grain size**
- **texture**
- **hardness**



**Content Purpose:**

**Identify and describe the three major types of rocks**

**Language Purpose:**

**Use the terms: compaction, deposition, cementation, solidification, temperature, pressure, composition, texture, grain, magma, and lava in your conversations and written work.**

**PGW Outcome:**

**Identify the characteristics of rocks and describe how the major types of rocks are formed by completing each of the 3 mini-labs**



**Rock #1**

**Rock #2**

**Rock #3**



**Schist**

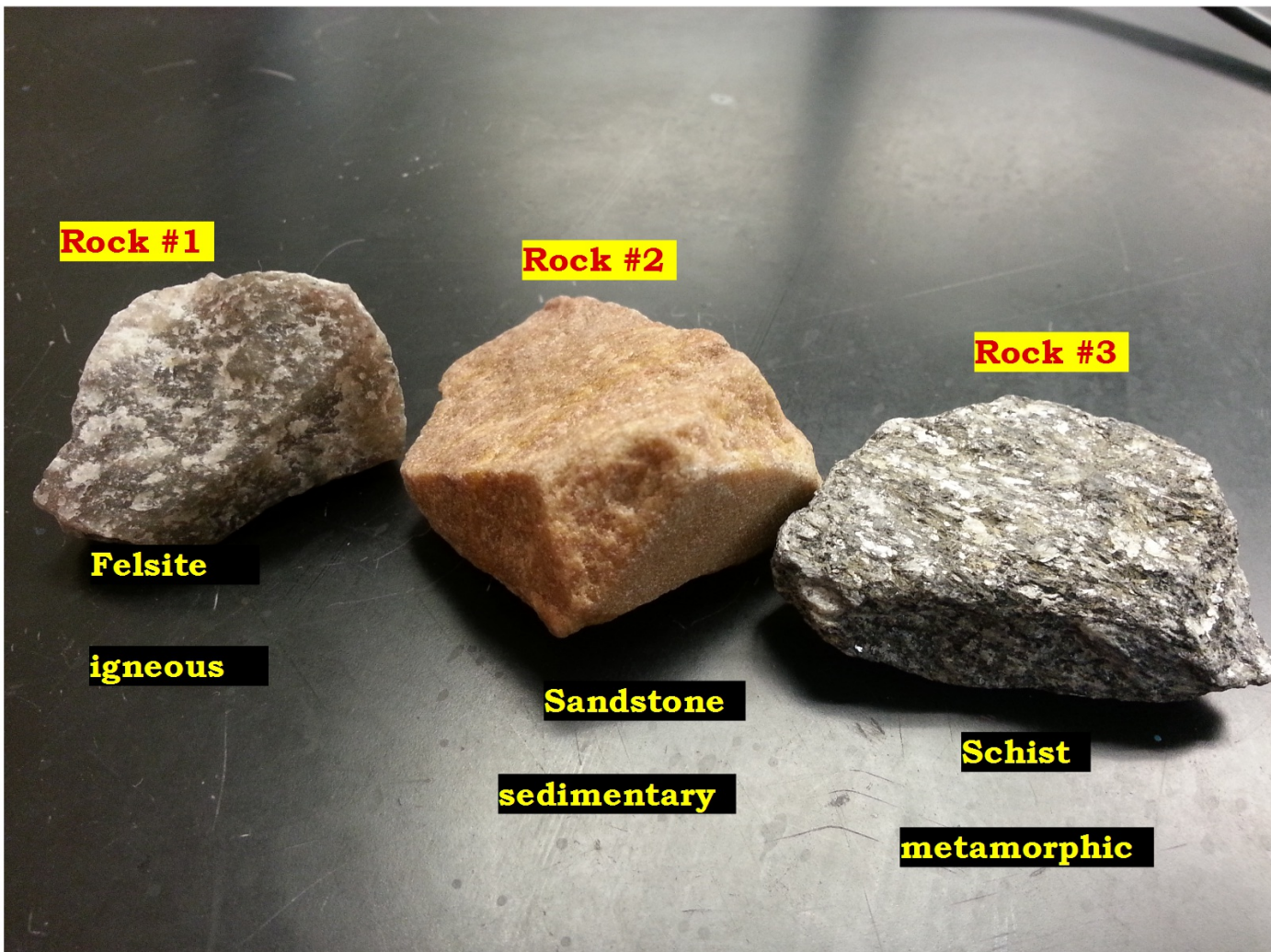
**Felsite**

**sedimentary**

**metamorphic**

**igneous**

**Sandstone**



**Rock #1**

**Rock #2**

**Rock #3**

**Felsite**

**Sandstone**

**Schist**

**igneous**

**sedimentary**

**metamorphic**



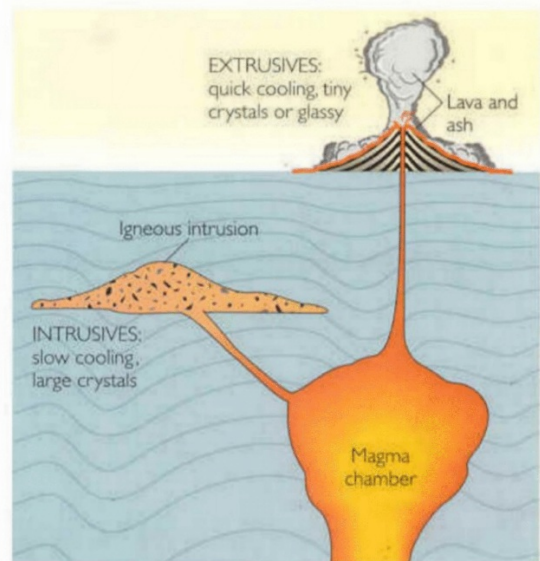
## Igneous Rock Notes for ISN:

Igneous rock forms when \_\_\_\_\_  
cools and \_\_\_\_\_.

Igneous rocks can be subdivided according to the environments they formed.

**Intrusive Igneous Rock**- magma cools and solidifies \_\_\_\_\_ within the earth. \_\_\_\_\_ crystals that have had time to form.

**Extrusive Igneous Rock**- lava flows from the earth (sometimes explosively), creating \_\_\_\_\_, glassy crystals.

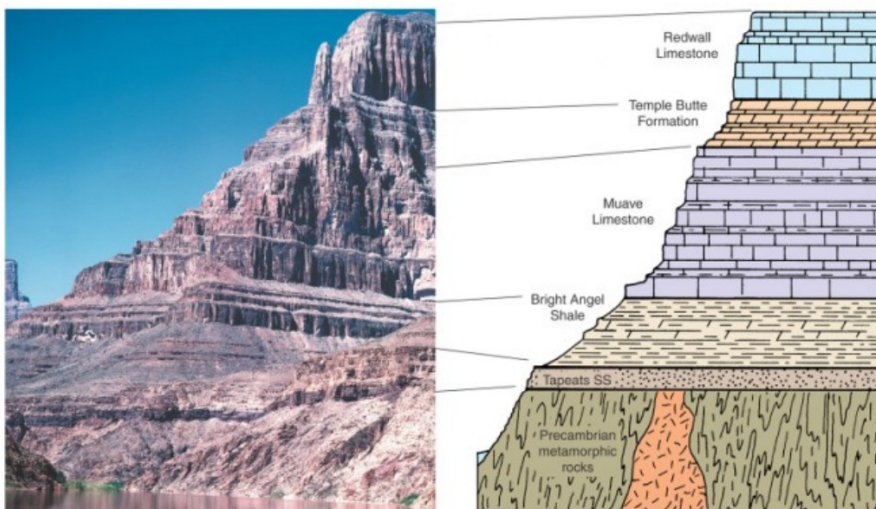


## Sedimentary Rock Notes for ISN

Sedimentary rocks form from particles of \_\_\_\_\_ rocks that have been \_\_\_\_\_ and are small.

**Sediment** is the \_\_\_\_\_ pieces of rock that result when other rocks are broken down. Sedimentary rocks are made mostly of \_\_\_\_\_.

Sedimentary rocks are formed through layers of sediment deposited



\_\_\_\_\_ causes sediment to flow downhill, and form layers. The layers look different because of the different \_\_\_\_\_ being layered.

## Metamorphic Rock Notes for ISN:

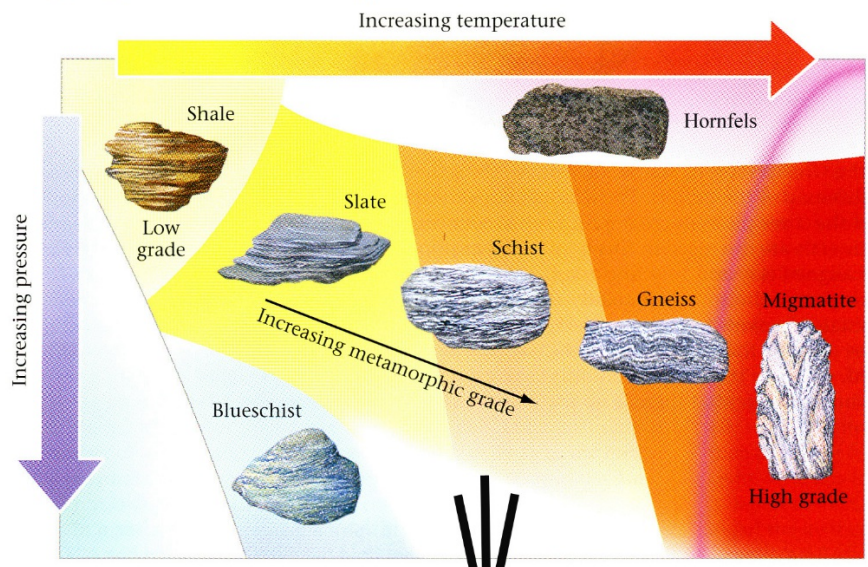
Metamorphic Rock is created when rock is subjected to \_\_\_\_\_, & \_\_\_\_\_ (or both).

\_\_\_\_\_ becomes deformed as metamorphic rock is created.

Higher **pressure** and higher **temperature** changes mineral \_\_\_\_\_ and \_\_\_\_\_, changing the make-up of the rock.

Rock slowly \_\_\_\_\_ when subjected to increased \_\_\_\_\_. As heat and pressure increased, rock \_\_\_\_\_.

If temperature keeps increasing, eventually the rock will \_\_\_\_\_ and become magma.







**Content Purpose:**

Identify and describe the three major types of rocks

**Language Purpose:**

Use the terms: **compaction, deposition, cementation, solidification, temperature, pressure, composition, texture, grain, magma, and lava** in your conversations and written work.

**PGW Outcome:**

Identify the characteristics of rocks and describe how the major types of rocks are formed by completing each of the 3 mini-labs



## **Rock Mini-Lab!**

**Purpose:** Each group will rotate through the 3 lab stations and demonstrate how each type of rock is formed, collecting characteristics of each rock

**Group 1 & 6: Igneous Rock Mini-Lab**

**Group 2 & 5: Sedimentary Rock Mini-Lab**

**Group 3 & 4: Metamorphic Rock Mini-Lab**

### **Igneous Rock Mini-Lab**

using "molten" sugar, explore the differences in texture and crystal size as igneous rock is formed in its two different environments

### **Sedimentary Rock Mini-Lab**

using compiled sediment, explore how deposition (layers) and compaction (pressure from above) form sedimentary rocks

### **Metamorphic Rock Mini-Lab**

formed by heat and pressure, explore how the combination of these forces create different patterns in metamorphic rock

**#2: Safety**

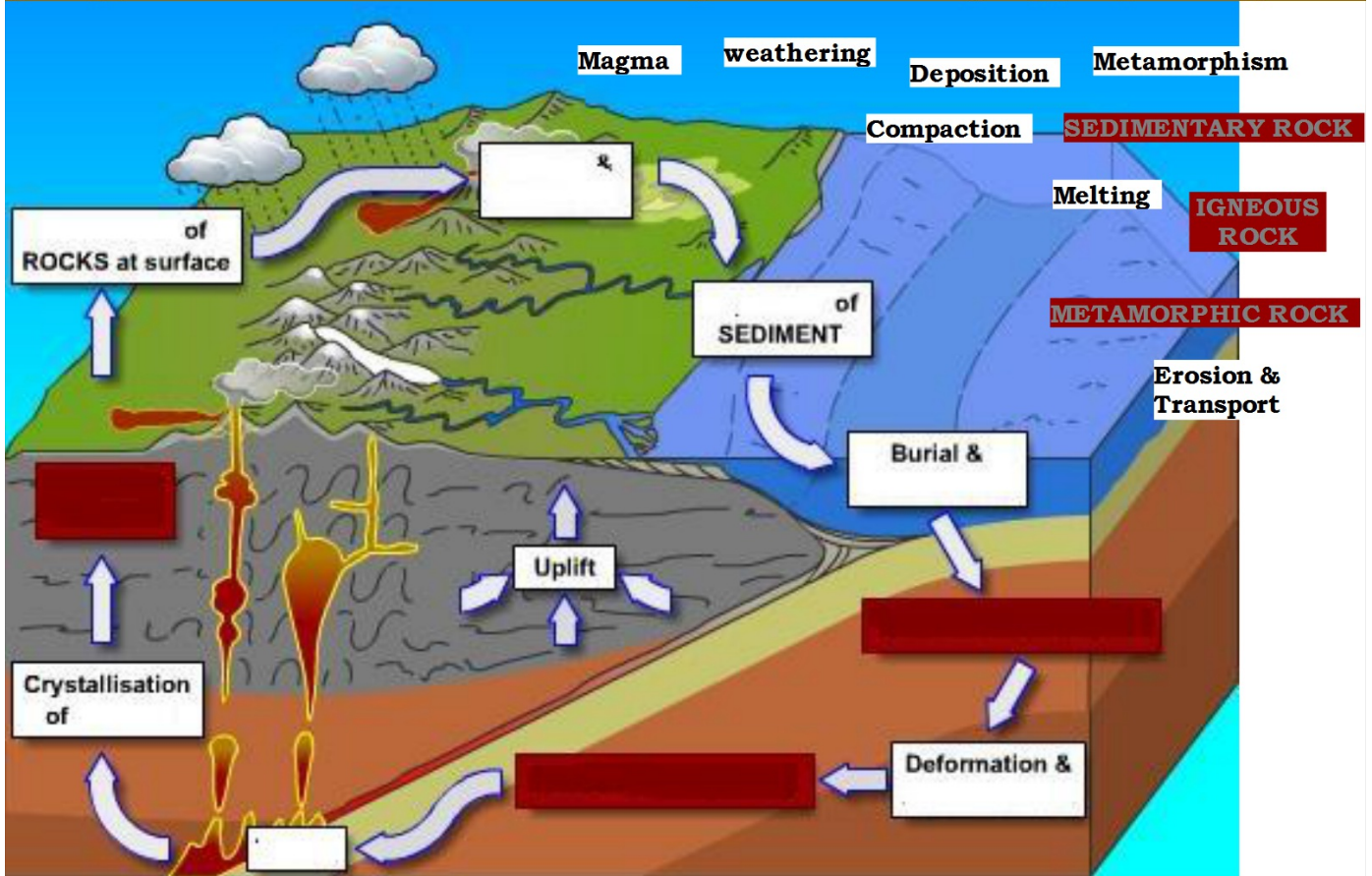
**#3: Team Leader**

**#4: Material Manage**

**Day 3**

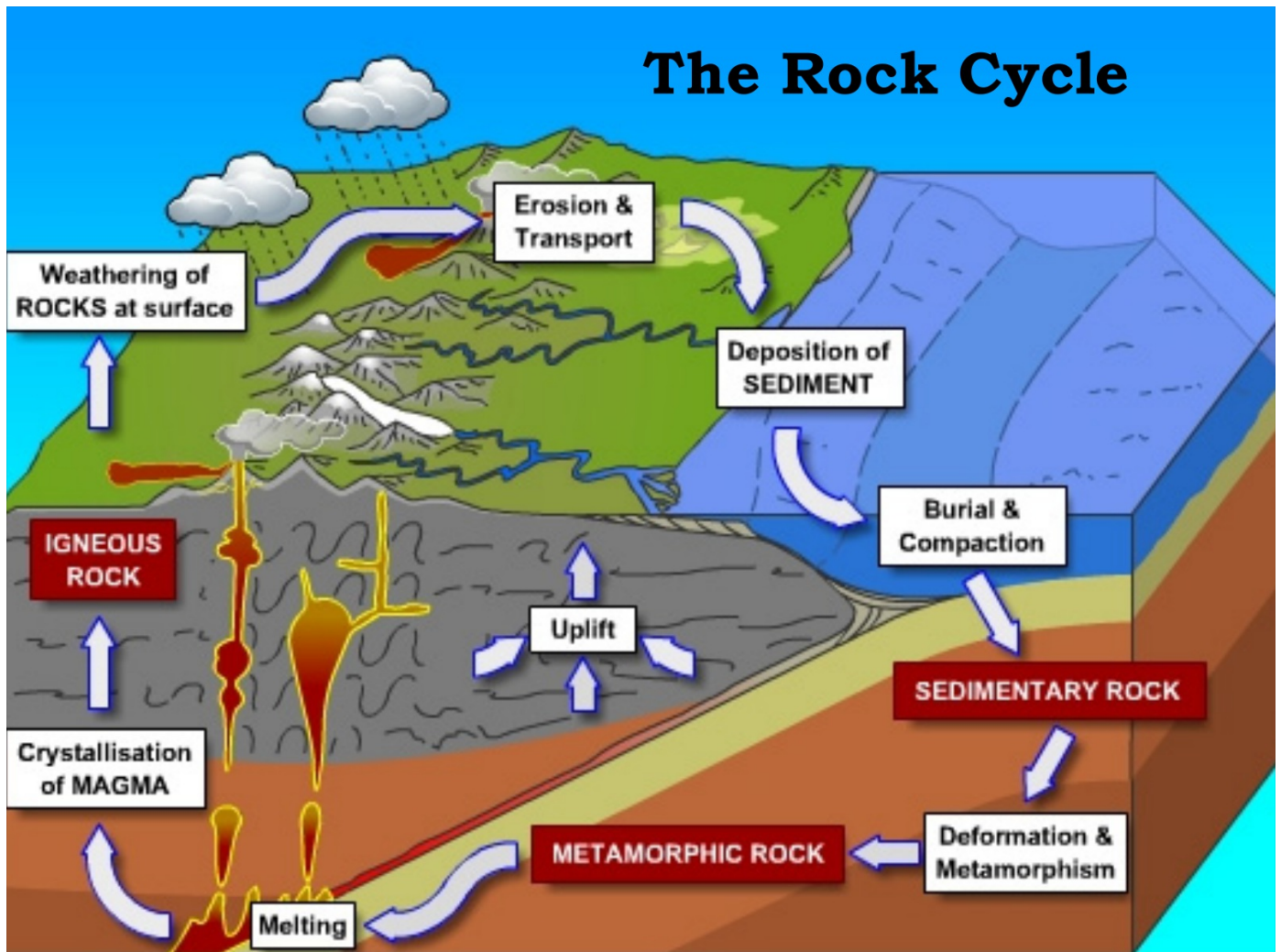


**Bellwork: Using what you learned about each of the 3 major types of rock; igneous, sedimentary and metamorphic; discuss with your group, and fill in the terms where you think they appropriately fit.**





# The Rock Cycle





## Content Purpose:

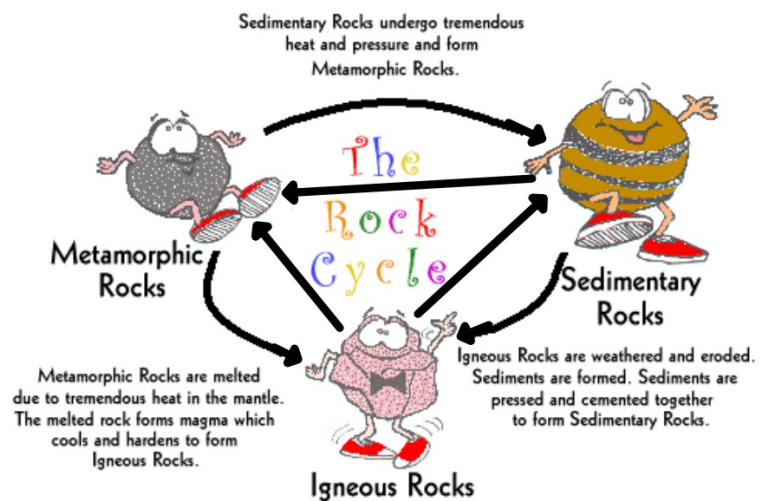
Identify and illustrate all the pathways of the rock cycle and the processes involved in the changes from one type of rock to another.

## Language Purpose:

Use the terms; **igneous, metamorphic, sedimentary, texture, grain, magma, lava, weathering** and **uplift** in your written work

## PGW Outcome:

As a group, students will create a round table narrative story from a rock's perspective as it travels through the life cycle; demonstrating the structure and characteristics of each phase of the rock cycle



## Notes for your ISN (right side!)

**Some Rock Cycle processes occur only beneath Earth's surface, such as those that involve extreme temperature, pressure and melting.**

**Uplift-** a tectonic process that forces these rocks onto Earth's \_\_\_\_\_ (out of the ground).

**On the surface, rocks can change due to natural processes such as \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.**

**magma-** molten rock \_\_\_\_\_ the earth's surface

**lava-** molten rock \_\_\_\_\_ from the earth's surface

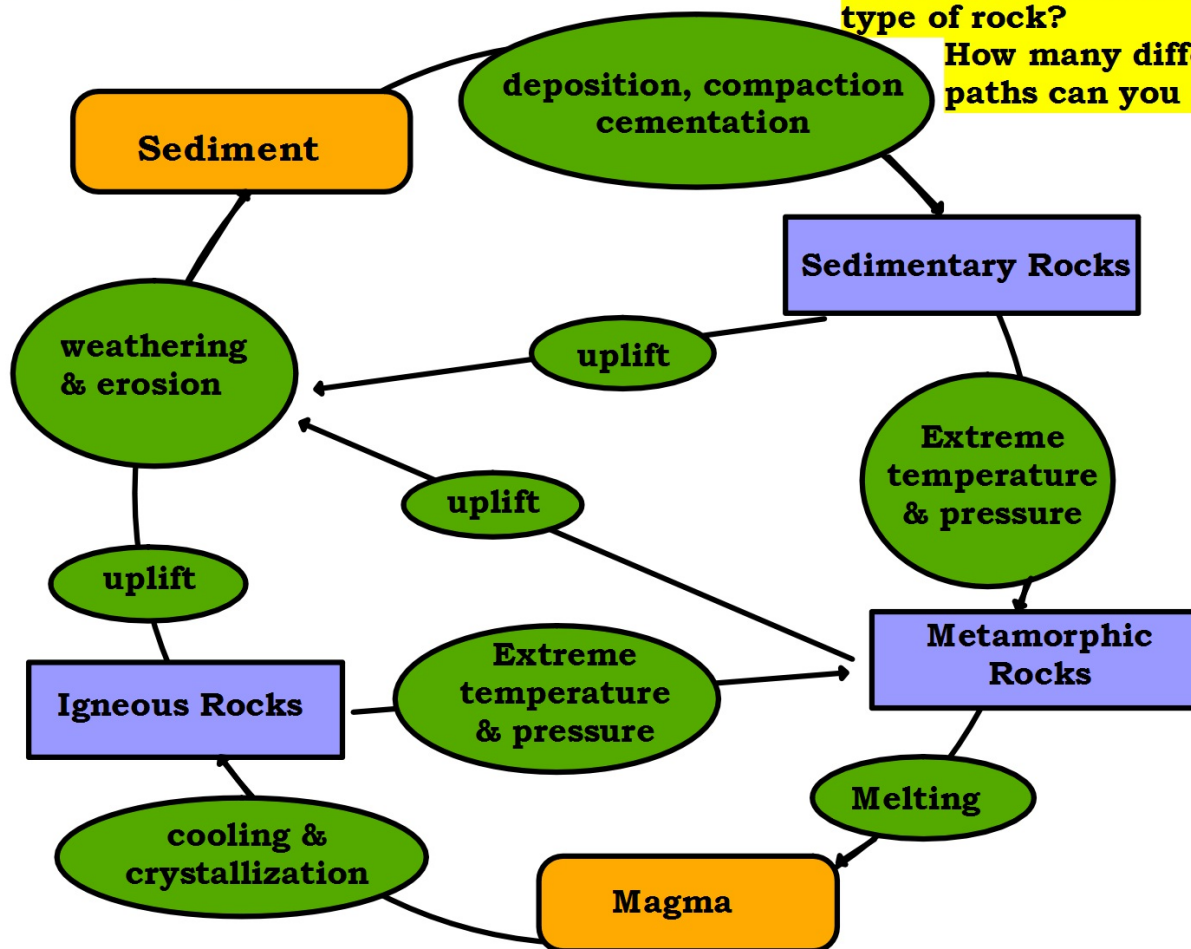
**A rock is made up of grains which can be mineral crystals or other solid fragments.**

**weathering-** \_\_\_\_\_ into smaller pieces.

Copy the Rock Cycle into LEFT side of your ISN

Is it possible for one type of rock to change into another type of rock?

How many different paths can you trace?





## **Kagan Activity: Round Table**

### **"My Group Narrative of the Rock Cycle"**

**Objective:** You will make a story as a group, building on one-another's sentences, and work through the rock cycle from the rocks' perspective.

#### **Instructions:**

- Each person grab a different color of colored pencil
- Starting with person #1 chose which type of rock you'd like to start with (igneous, sedimentary, metamorphic).
- Person #1 writes one sentence *from the rock's perspective*: what do they see? what is happening? what does the rock look like?
- After person #1 writes ONE sentence, they pass the paper on to #2  
**I'm a slow-moving lava flow on the island of Honolulu, it's a lot chillier here out in the air than it was inside the Earth.**
- person #2, who takes their colored pencil and writes ONE sentence building on the previously written information:  
**While I was still hot, I made my way down to the sea where the waves knock against me all day, every day.**
- Then pass the paper on to the next person #3 and so on.  
**I've been shrinking. Over a few hundred years, I've worn away into the ocean, scattering the ocean floor as a tinier version of myself.**
- Each person writes a sentence in the story until all parts of the rock cycle have been covered and the rock resumes it's original form.  
**Some coral and other parts of the volcano have layered on top of me, making me feel chlosterphobic and squished. AND SO ON...**

# **Kagan Round Table Rock Cycle Narrative**

## **Criteria:**

- **rock must become metamorphic, igneous and sedimentary at least once**
- **may choose any path to follow in rock cycle**
- **must go through weathering and melting**
- **use appropriate, descriptive terms**