Warm-up

1. What are 3 types of Rocks?

2. Which type of rock is formed from cooling magma?

3. How many neutrons are in a carbon 14 isotope? (atomic number of carbon is 6.)

INQUIRY: Chapter 3
How Are a Group of Rocks Alike & Different?

Name _____
Period _____ Date _____

Purpose: You will classify six different rock samples by observing similarities and differences among the samples.

Materials:

- Hand Lens
- Six Rock Samples

Data:

For the six samples record in the table three ways in which ***all samples*** **are similar and different to each other.**

	Similarity	**Difference**
1	**Ex: similar hardness?**	**Ex: Diff. colors?**
2	**Ex: similar shapes?**	**Ex: Some float, others don't**
3	**Ex: similar sizes?**	

Questions:

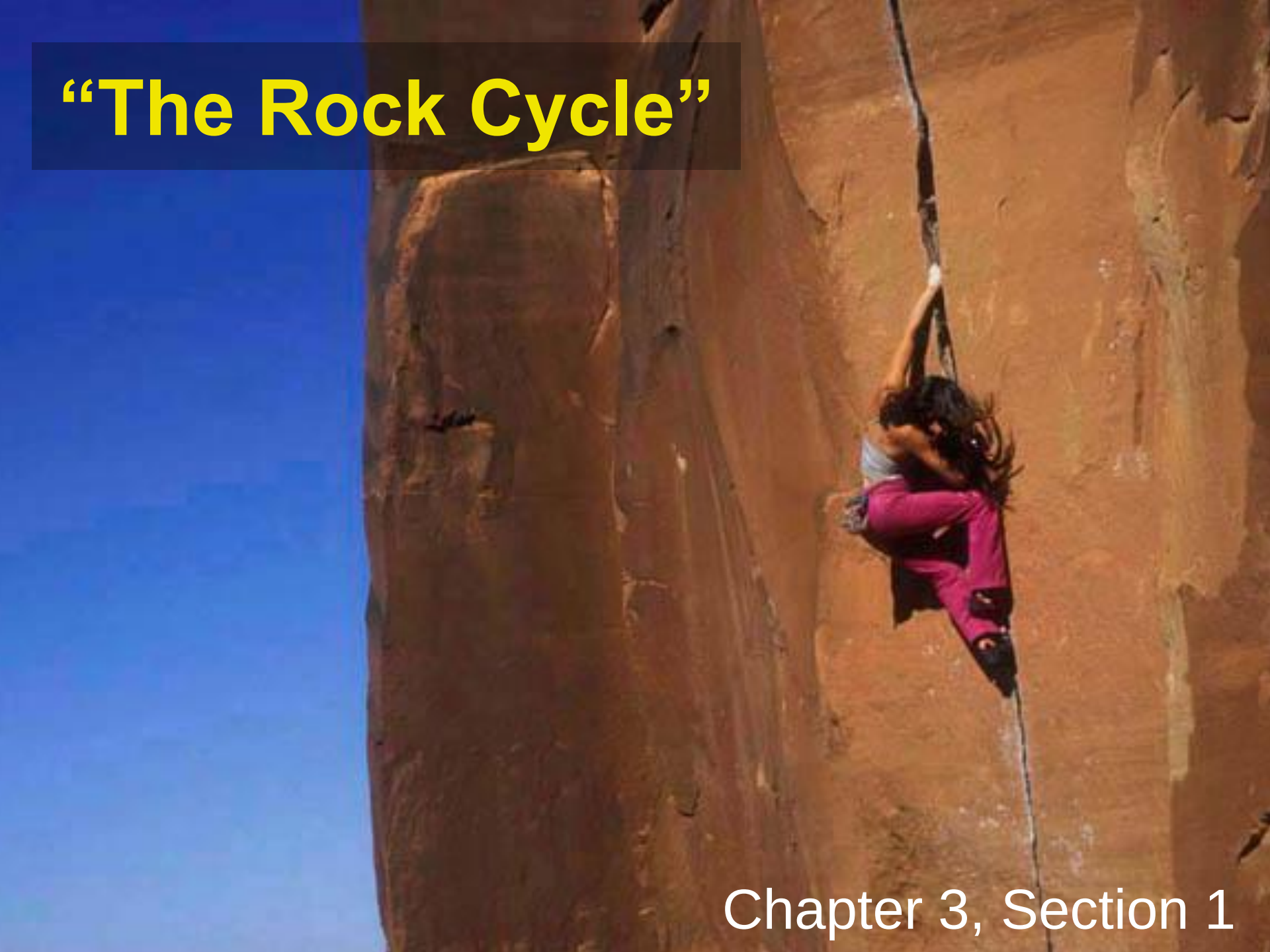
1. Classify the rocks into **three groups** based on your observations. Give reasons for your groupings.

2. How are the rock **samples similar**? How do they **differ**?

3. How does your classification scheme compare with the classification schemes of at least **two other students**? How do they differ? **TALK TO YOUR NEIGHBORS! COLLABORATE!**

4. Each of the rocks used in this activity belongs to one of the **three major groups of rocks**. Hypothesize what makes one group of rocks different from the others.

“The Rock Cycle”



Chapter 3, Section 1

Rock!

- **Natural, solid, mass of mineral-like matter.**
- **Mineral + Mineral = Rock**
- A few exceptions…
  - Some organic
  - Some no crystals

3 Types of Rocks

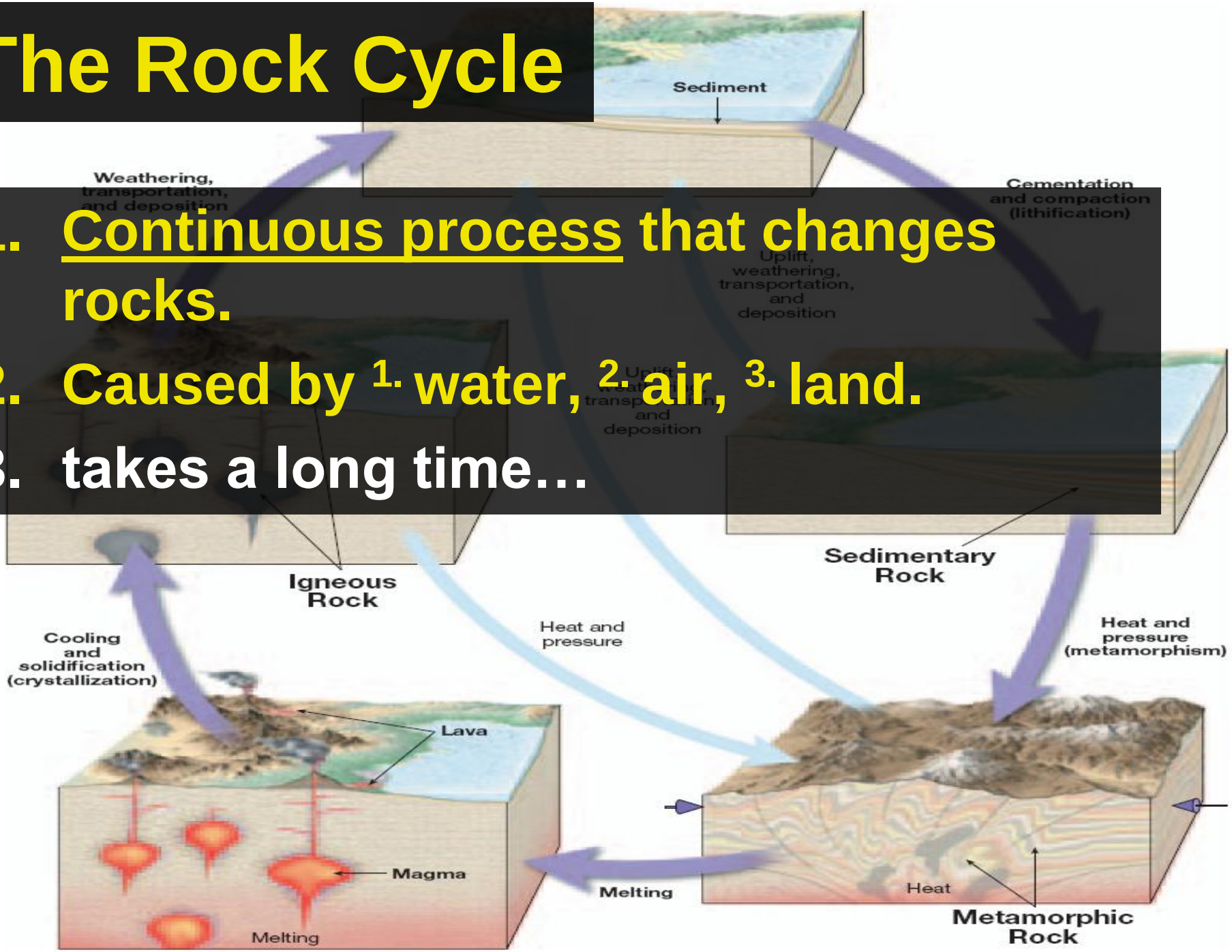
1. Igneous

2. Sedimentary

3. Metamorphic

The Rock Cycle

1. <u>Continuous process</u> that changes rocks.
2. Caused by [1.] water, [2.] air, [3.] land.
3. takes a long time…



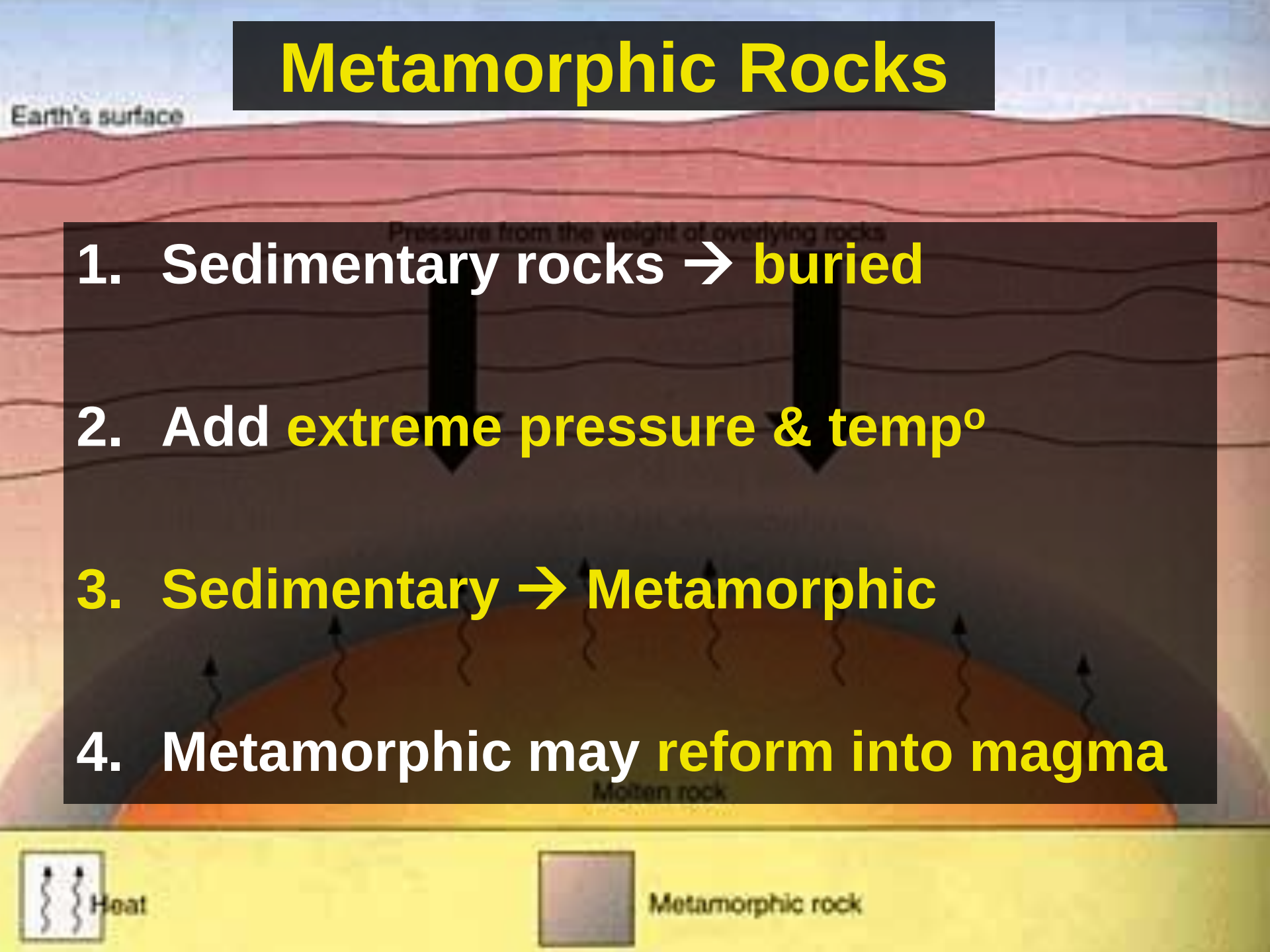
Igneous Rock

- **Magma!**
  - Melted rock under Earth's surface
  - Volcanic eruption.
- **Cooling Magma → Igneous rock!**
- **Lava!**
  - Magma that reaches the surface

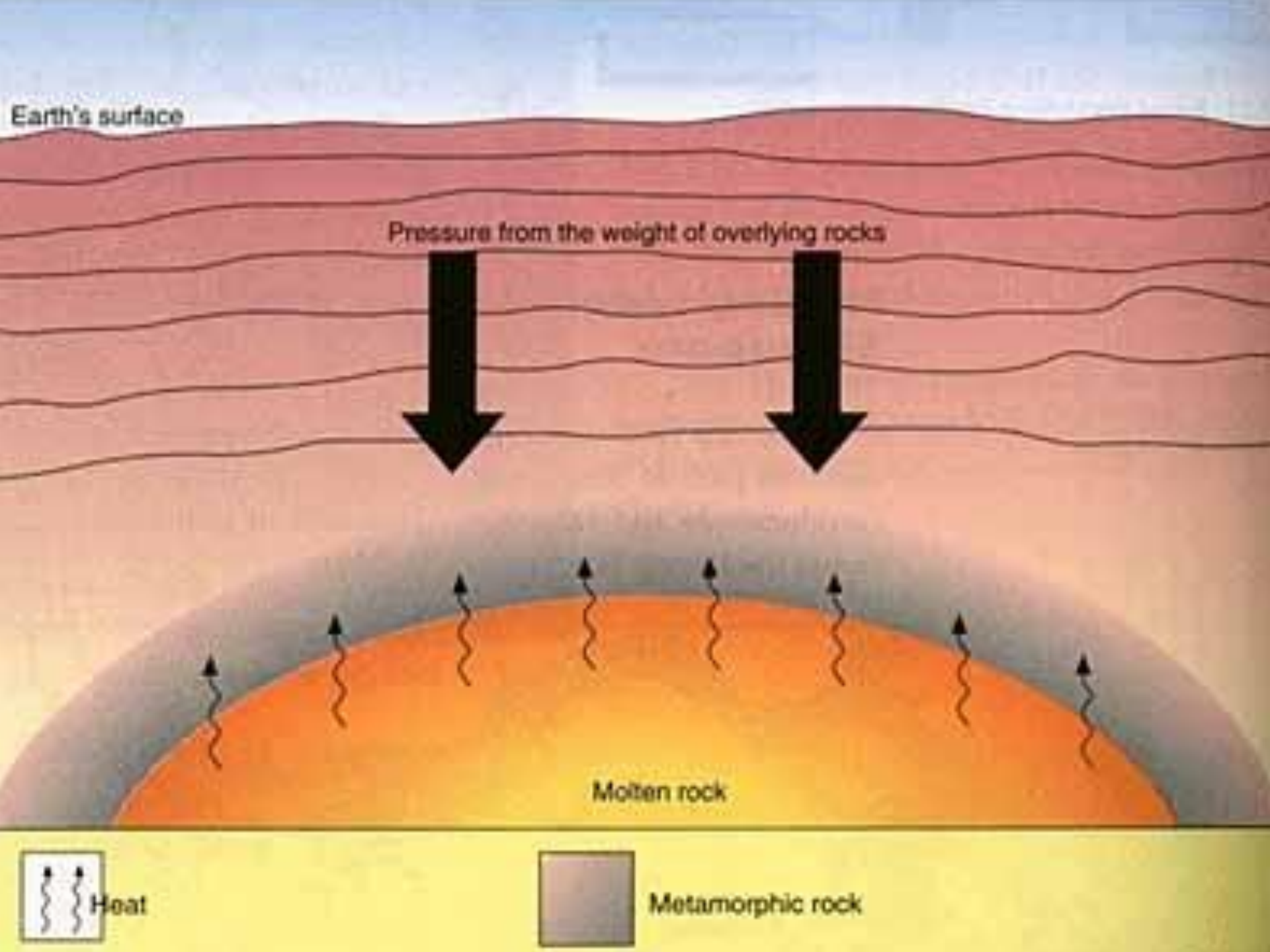
Sedimentary Rocks

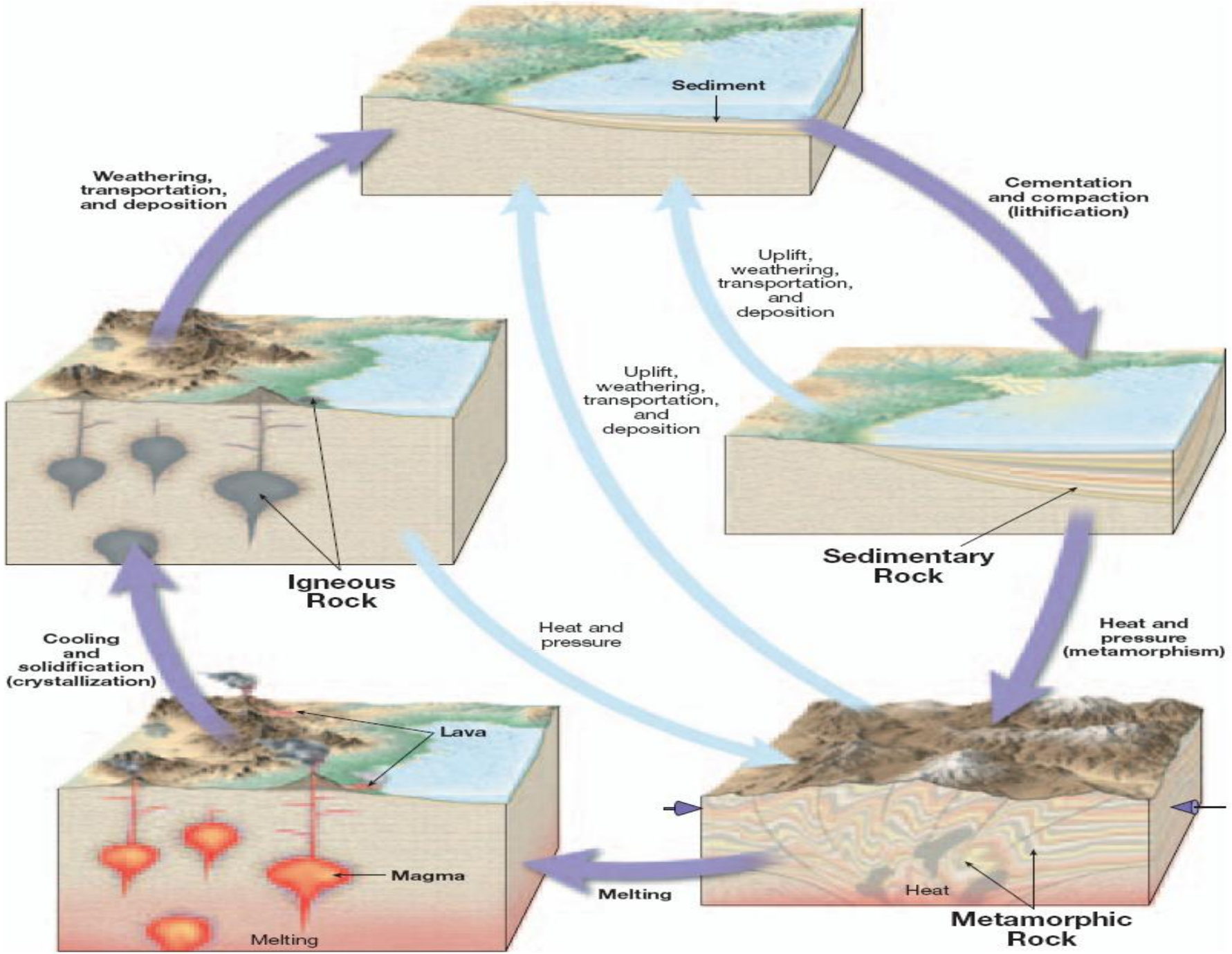
- **Weathering:**
  - **rocks are broken down by water, air, & animals**
- **Sediment:**
  - **broken pieces of rock**
- Eventually…
- **Sediments are compacted & cemented** to form sedimentary rocks

Metamorphic Rocks



1. Sedimentary rocks → buried
2. Add extreme pressure & tempº
3. Sedimentary → Metamorphic
4. Metamorphic may reform into magma


Earth's surface
Pressure from the weight of overlying rocks
Molten rock
Heat
Metamorphic rock


Sediment
Weathering, transportation, and deposition
Cementation and compaction (lithification)
Uplift, weathering, transportation, and deposition
Uplift, weathering, transportation, and deposition
Igneous Rock
Sedimentary Rock
Heat and pressure
Heat and pressure (metamorphism)
Cooling and solidification (crystallization)
Lava
Magma
Melting
Melting
Heat
Metamorphic Rock

Assignment

- Draw and Label the Rock Cycle. (p.67)
- Include:

1. **Formation of Sedimentary rocks** (5pts)
   - Weathering
   - Sediment
2. **Formation of Igneous rocks** (5pts)
   - Cooling Magma
3. **Formation of Metamorphic rocks** (5pts)
   - Heat & Pressure
4. **Effort** (5pts)

Assignment

- Read Chapter 3, Section 2 (pg. 70-74)
- Do 3.1 Assessment #1-7 (pg. 74)