**AP Environmental Science Ms. Taylor**

**Unit 1- Earth Systems and Resources-** *The Rock Cycle*

**AIM:** *What are the 3 types of rocks, how are they formed, and what causes them to change over time?*

**The Formation of Rocks:**

* Over geological time, rocks and the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** that comprise them are heated, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** broken down, and reassembled in a very slow process called the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Rock = any **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of minerals
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**= naturally occurring **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**element or compound with a crystal structure
  + Specific structure
  + Chemical properties
  + Physical properties
* The type of rock in any given region affects **soil** characteristics, and therefore influences the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**community

**There are 3 Major Types of Rocks:**

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Igneous Rocks**

* All rocks can **\_\_\_\_\_\_\_\_\_\_\_\_**
* At high temperatures, rocks will enter the liquid state as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Magma can rise into the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and be cooled **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the surface
* Magma can rise and be released through the lithosphere as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Lava may “explode” or “**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**”
* When magma or lava cools, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**rocks are formed
* **2 types of igneous rock**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** igneous rock
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** igneous rock

**Intrusive Igneous Rock:**

* Intrusive igneous rock forms when magma **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** cools **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** earth’s surface
  + Example = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** rock

**Extrusive Igneous Rock:**

* Extrusive rock forms when lava is ejected **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the surface and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Example **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**and volcanic islands are made almost entirely of basalt

**Sedimentary Rock:**

* All exposed rock **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** away over time.
* Wind, water, freezing, thawing, etc. strips away at rocks grain by grain
* Particles of rocks are blown away by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** or **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**by water
* Particles will settle downhill, downstream, or downwind from their sources, forming **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Sediment layers **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** over time, causing weight and pressure on the layers underneath
* Sedimentary rock forms as sediments are physically pressed together (**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**)
* Minerals **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**sediment particles together (**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**)
* The entire process of compaction and cementation to form a sedimentary rock is called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Examples of sedimentary rock are **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and evidence of geological events are found in sedimentary rock layers!!
* Evidence of floods, volcanic eruptions, earthquakes, glaciers, tsunamis, etc.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** examines sedimentary rock!
* Sedimentary rocks pile up in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**order!

**Metamorphic Rock:**

* Geological forces can **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the forms of rocks.
* When any rock is subject to great **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, it may alter its chemical/physical form
* Metamorphic rocks are made **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** under earth at high temperatures and pressures
* EXAMPLE- when **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**is under great heat and pressure, it turns into **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Soil:**

* **\_\_\_\_\_\_\_\_\_\_\_\_** layer on the top of Earth’s land surface
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Soil is derived from **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**= the base geological rock in a particular area
  + Material may be **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**by water, wind, or ice
  + Material may be**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Bedrock = The mass of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rock that makes up earth’s **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Weathering:**

* Parental material is broken down by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Weathering = the physical, chemical, and biological processes that converts **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** rock particles into **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**particles

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ AP Environmental Science

**HOMEWORK-** Earth Systems and Resources- The Rock Cycle

1. What are rocks made of?
2. In general, how are rocks different than one another?
3. How do rocks directly affect ecosystems?
4. What are the 3 types of rocks?
5. What are the 2 types of igneous rocks?
6. Explain how each type of igneous rock forms.
7. Give an example of each type of igneous rock
8. Explain which type of igneous rock would be found at the Mid Atlantic ridge and WHY
9. What happens to exposed rocks over time?
10. What are 3 forces that can move rock particles?
11. In which direction do rock particles move and settle?
12. Explain the two processes involved in the lithification of sedimentary rock
13. What are 2 examples of sedimentary rocks?
14. What evidence can we gain from sedimentary rocks?
15. What is the rule of superposition?
16. How do metamorphic rocks form?
17. Give an example of rock metamorphosis.
18. Explain how a metamorphic rock could turn into a sedimentary rock.
19. Explain how a sedimentary rock could turn into an igneous rock.
20. Explain how an igneous rock could turn into a metamorphic rock.
21. Where is soil found?
22. What is the material called that soil forms from?
23. Where can this material come from?
24. What process begins to turn rocks into soil?

