**Overview Rocks**

**Directions:** Complete the concept map using the terms in the list below.

**metamorphic rock cycle igneous limestone**

The

**Directions:** Select the correct answer from the possibilities below and write the letter in the space provided

\_\_\_\_\_\_\_\_ 5. The rock cycle illustrates the principal of the conservation of matter by explaining how \_\_\_\_\_\_.

 a. a sedimentary rock can become metamorphic rock

 b. a metamorphic rock can become an igneous rock

 c. an igneous rock can form a sedimentary rock

 d. all of the above

4.

marble

granite

rocks such as

rocks such as

rocks such as

sedimentary

3.

2.

and includes

1.

and includes

and includes

illustrates how rocks

change through time

**Section 1 – The Rock Cycle and Igneous Rocks**

**Directions:** Study the following diagram and answer the questions below.



1. The diagram shows the three types of rock and the processes that form them.

 This process is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. Lava and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can cool to become igneous rocks.

3. Heat and pressure can turn sedimentary or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into

 metamorphic rocks.

4. Metamorphic rock can \_\_\_\_\_\_\_\_\_\_\_\_ and then cool to become igneous rock.

5. Weathering and erosion break igneous and other types of rock into smaller

 pieces called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Section 2 - Metamorphic and Sedimentary Rock**

**Directions:** Write the correct term from the list below in the box next to the number

metamorphic foliated rock coal chalk

detrital rock nonfoliated rock chemical rocks stacked rocks

sedimentary rocks fossil-rich limestone

1. A type of metamorphic rock in which mineral grains grow and rearrange but do not form

 layers.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. A type of organic sedimentary rock formed from the pieces of dead plants.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Rocks formed by changes in temperature and pressure or the presence of hot, watery fluids.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Sedimentary rocks such as halite that are formed when minerals come out of solution.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Sedimentary rocks such as sandstone that are formed from broken fragments of other rocks.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. A type of organic sedimentary rock made of the mineral calcite and formed largely from the

 shells of ocean animals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Rocks formed when sediments are pressed and cemented together or when minerals form

 from solutions. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. A type of metamorphic rock in which mineral grains flatten and line up in parallel layers.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Sedimentary rock in which older rocks, unless disrupted, are on the bottom.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. An organic sedimentary rock made of microscopic shells.

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 3: Metamorphic Rocks**

**Directions:** Complete the concept map using the terms below.

**metamorphic rocks foliated rocks marble gneiss**

**nonfoliated rocks quartzite sandstone shale**

**granite**

1.

can be classified as

3.

2.

2 examples are

2 examples are

6.

5.

4.

slate

forms from

forms from

forms from

forms from

 limestone

9.

8.

7.

**Directions:** Write **T or F** in the space provided depending on the statement.

\_\_\_\_\_10. Metamorphic rocks form only from igneous rocks

\_\_\_\_\_11. An igneous rock like granite can be formed into a metamorphic rock like gneiss.

\_\_\_\_\_12. heat and pressure have no effect on rocks.

\_\_\_\_\_13. One type of rock, such as shale, can change into several different kinds of

 metamorphic rock.

**Section 4: Sedimentary Rock**

**Directions:** Complete the outline by filling in the blanks.

I. Materials that make up sediments

 A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

II. Ways sedimentary rocks can form

 A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Definition:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 C.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Definition:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

III. Classification of sedimentary rocks

 A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 B.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 C.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Examples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Section 5 – Crystallization**

**Directions:** This chart represents the order in which different minerals crystallize from cooling magma or lava to form igneous rocks. Both the mineral names and the rocks they form are shown. Use the chart to answer the questions.

|  |  |  |  |
| --- | --- | --- | --- |
| **Crystallization** | Iron-magnesium  | Feldspar minerals | Rock Names |
| First to crystallized te ec mr ee ra as tI un rg eLast to crystallize | Olivine Plagioclase (calcium feldspar) Pyroxene \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Amphibole Plagioclase (sodium feldspar) Biotite\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Orthoclase(potassium feldspar)Quartz | Gabbro, basaltDiorite,andesiteGranite, rhyolite |

1. Which minerals are the first to crystallize from cooling magma?

2. What kind of rocks are formed by these minerals?

3. Which mineral crystallizes at the lowest temperature?

4. Which mineral, pyroxene or orthoclase, crystallizes from magma first?

5. Which feldspar mineral is found in granite?

6. What minerals form the rocks diorite and andesite?

7. Minerals higher in silica content crystallize from magma at lower temperatures. Which

 magma, basaltic or granitic, is higher in silica content?

8. Magma that is low in silica content flows more easily. Which kind of lava, basaltic or

 granitic, flows faster?

**Section 6: Rocks**

**Directions:** Match the terms in Column II with the descriptions in column I. Write the letter of the correct term in the blank at the left.

Column I Column II

\_\_\_ 1. rocks formed by changes in heat and pressure or the a. granitic

 presence of hot, watery fluids

\_\_\_ 2. rocks formed from molten material b. metamorphic rocks

\_\_\_ 3. rocks formed from sediments c. rock cycle

\_\_\_ 4. igneous rocks formed on or near Earth’s surface d. sedimentary rocks

\_\_\_ 5. layered metamorphic rocks e. cementation

\_\_\_ 6. process by which sediments are pressed together to form rock f. basaltic

\_\_\_ 7. light-colored igneous rocks with a lower density than basaltic g. rock

 rocks

\_\_\_ 8. dense, dark-colored igneous rocks h. extrusive

\_\_\_ 9. metamorphic rocks that don’t have layers i. sediments

\_\_\_10. process by which large sediments are glued together by j. igneous rocks

 dissolved minerals to form rock

\_\_\_11. igneous rocks formed below the Earth’s surface k. compaction

\_\_\_12. bits of weathered rock, minerals, grains, plants, and l. intrusive

 animals that have been eroded

\_\_\_13. model that illustrates the processes that create and change rock m. foliated

\_\_\_14. magma that reaches Earth’s surface and flows from volcanoes n. lava

\_\_\_15. a mixture of minerals, organic matter, volcanic glass, or other o. nonfoliated

 materials.