Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_

***Rocks and Minerals Webquest***

**Directions:** Answer the following questions using the websites provided for each question (the underlined words are hotlinks).

**Minerals: Did you know the following about minerals?**

1. What is an unusual property of the mineral [ulexite](http://gwydir.demon.co.uk/jo/minerals/ulexite.htm)[? **http://gwydir.demon.co.uk/jo/minerals/ulexite.htm**](http://gwydir.demon.co.uk/jo/minerals/ulexite.htm)
2. What role does the [mineral fluoride](http://www.healthylivinganswers.com/vitamins/fluoride-mineral.html) play in your health?[**http://www.healthylivinganswers.com/vitamins/fluoride-mineral.html**](http://www.healthylivinganswers.com/vitamins/fluoride-mineral.html)
3. Write 3 minerals found in a house. Name the specific product **and** where it is used. [**http://www.mineralogy4kids.org/minerals-your-house**](http://www.mineralogy4kids.org/minerals-your-house)

* .
* .
* .

1. What is the difference between a [mineral and a rock](http://www.ohiodnr.com/Portals/10/pdf/HandsOn/HandsOn11.pdf)?
2. **[http://www.rocksforkids.com/3identification.html](http://www.rocksforkids.com/3identification.html )**

**Rock Cycle** [**http://www.cotf.edu/ete/modules/msese/earthsysflr/rock.html**](http://www.cotf.edu/ete/modules/msese/earthsysflr/rock.html)

1. What are the three main types of rocks?
2. How does a sedimentary rock turn into a metamorphic rock?
3. How does an igneous rock turn into a metamorphic rock?
4. How do metamorphic rocks change into sedimentary rocks?
5. How do igneous rocks change into sedimentary rocks?
6. Rock cycle:
7. What is the beginning of the rock cycle?
8. The end?

**View this Rock Cycle Animation**

**[http://www.classzone.com/books/earth\_science/terc/content/investigations/es0602/es0602page02.cfm?chapter\_no=investigation](http://www.classzone.com/books/earth_science/terc/content/investigations/es0602/es0602page02.cfm?chapter_no=investigation" \t "_blank)**

\*\*\*You must click and read each step of the animation to answer the next 3 questions\*\*\*

1. Quick cooling forms many small what?
2. When you look at the desert monuments, what eroded away?
3. The microscopic view of sandstone contains what two components?
4. What two things are needed to turn igneous rock into metamorphic rock? [**http://www.classzone.com/books/earth\_science/terc/content/investigations/es0602/es0602page03.cfm?chapter\_no=investigation**](http://www.classzone.com/books/earth_science/terc/content/investigations/es0602/es0602page03.cfm?chapter_no=investigation)

**Rocks – 6 Identifying Characteristics** [**http://www.learner.org/interactives/rockcycle/types.html**](http://www.learner.org/interactives/rockcycle/types.html)

1. List ***and*** define the 6 key characteristics that can help you identify rocks within the three main classes.

**How are the Names of the Three Main Rock Types Used in Everyday Life?**

You have researched the three main types of rocks. The words naming these types of rock are used in everyday life. Hopefully thinking about how the words are commonly used will help you remember the rocks are formed.

**\*\*\*Think about the words below or use an on-line dictionary.** [**http://www.merriam-webster.com/**](http://www.merriam-webster.com/)

1. One type of rock is igneous. Igneous is similar to ignite. What does the word **ignite** mean?
2. Sedimentary sounds similar to **sedentary**. Suppose someone was described as **sedentary**. You would then picture her/him as which of these? (Circle one of the 3 choices below.)

Fiery and exciting / Slow - steadily teaching one step at a time / Changing throughout the year.

1. One type of rock is “metamorphic”.
   1. What does the verb **morph** mean? (Be sure to scroll down to the VERB definition, not the noun.)
   2. Name an animal that "morphs" \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hour \_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_

**Types of Rocks Intro Reading**

**Directions:** Read the information below carefully and answer the questions that follow on the back side of this paper. Answer the questions as completely as possible.

**Rocks and Minerals**

The ground we walk on, build on, and grow gardens on is made of rock. All the rocks in the world are made up of chemicals called **minerals**. Minerals are solid, inorganic (not living) substances found in and on the earth. Most are chemical compounds, which means that they are made of two or more elements. For example, the mineral sapphire is made up of aluminum and oxygen. A few minerals such as gold, silver and copper are made of a single element. Minerals are considered to be the building blocks of rocks. Rocks can be a combination of as many as six types of minerals. Through a microscope, a rock shows that it is made of crystals of different minerals, all growing together like a puzzle.

Three types of rocks make up the Earth’s crust. Rocks are formed in three different ways to produce igneous, metamorphic, and sedimentary rocks. Igneous rocks form when molten magma cools and solidifies. Metamorphic rocks form when a rock is chemically changed by heat or pressure to form a new rock type. Sedimentary rocks form when fragments of rocks and other debris are cemented together.

**Igneous Rocks**

When a candle burns, a runny wax is formed that trickles down its side and solidifies. Igneous rocks are formed in a similar way. The rocks solidify from a mass of molten rock, such as when a lava flow cools and hardens. Because of the heat needed to form igneous rocks, they are sometimes called “rocks of fire.” There are two main types of igneous rock: extrusive and intrusive. Extrusive types form when molten rock comes to the surface and cools quickly, as with lava. This produces a very fine-grained rock. Intrusive rocks are those that solidified underground, cooling slowly to produce coarse-grained rocks. Examples: Granite, basalt, obsidian.

**Sedimentary Rocks**

Sedimentary rocks are formed when sediment (bits of rock plus materials such as shells and sand) get packed together. They can take millions of years to form. You never know what you might find in a sedimentary rock since many rocks of this type are made up of lots of other rocks, or even animal remains, all stuck together. Sedimentary rocks are built up of particles laid down as layers or beds of sediment and are later buried , compressed, and cemented into a solid mass. Most rocks that you see on the ground are sedimentary.   
Examples: Sandstone, shale, limestone.

**Metamorphic Rocks**

Metamorphic rocks are igneous or sedimentary rocks that have been transformed by heat, pressure, or both. Metamorphic rocks are usually formed deep within the Earth, during a process such as mountain building. When you bake bread, you mix flour, yeast, and water together and bake in a hot oven. In a similar way, heat and pressure from the overlying rocks, may change the nature of the rocks below. This process is called metamorphosis, which means “change.” Examples: Schist, slate, marble.

**Did You Know?**

Most of the ocean floor is made of basalt. This igneous rock continues to flow from the Earth through an underwater mountain ranges known as “mid-ocean ridges”?

**Questions** - Please write your answers in complete sentences!

1. What is the difference between rocks and minerals?

2. How many types of rocks make up the Earth’s crust?

3. What are the names of the 3 types of rocks?

4. How are igneous rocks formed?

5. What is another name for igneous rocks?

6. What is the difference between the two types of igneous rocks?

7. How are sedimentary rocks made? How long do they take to form?

8. How are metamorphic rocks made?

9. What processes on Earth may result in a metamorphic rock being formed?

10. Which two layers of the Earth are made of rock?

11. What are the names of the other two layers of the Earth, and what are they made of?

12. What type of rock is the ocean floor typically made of? What is the name of the example provided in the   
 reading?