The Rock Cycle

name:

1. There are many "cycles" in nature. What is a "cycle"?

_____

IGNEOUS ROCKS

SEDIMENTS

IMPORTANT – Go Benson's website (Unit 7) and watch the Rock Cycle Pencast and the PowerPoint presentation (bengalfrosh.com).

MAGMA

SEDIMENTARY ROCKS

METAMORPHIC ROCKS

2. How does a metamorphic rock become "igneous"?

_____

3. How does a sedimentary or igneous rock become "metamorphic"?

_____ and/or _____ Happens at _____

near _____ or where _____

4. How does any kind of rock become sediment?

_____ _____ _____

5. List the types of sediment from largest to smallest

_____ _____ _____ _____

6. How does sediment become sedimentary rock?

_____ And _____

7. What are the molecules that are recycled in the rock cycle?

_____

8. What keeps the rock cycle going?

_____ _____ _____

1. Granite from Boulder, MT ends up as sand and clay in the Gulf of Mexico. Put a "1" on the rock cycle diagram (other side of this sheet) to indicate where this process would be on diagram.

2. Limestone (heated by magma) changed into the marble found today near Montana City. Put a "2" on the diagram.

3. As magma works its way toward the surface, some of the surrounding sandstone melts becoming part of the magma. Put a "3" on the diagram. . . . You get the idea.

4. Lava erupted onto the surface during prehistoric times in Washington, forming the basalt of the Columbia Plateau

5. The Rimrocks in Billings are weathered and eroded, causing sand to be deposited where the Mississippi River empties into the Gulf of Mexico.

6. Some gneiss beneath Yellowstone Park melts and becomes part of the magma.

7. As the Rocky Mountains were formed, shale was squeezed and became slate.

For help refer to chapter 3 of your textbook.

8. Pieces of slate from the Belt Mountains are carried by streams to the floor of the Missouri River Valley where they are deposited as gravel.

9. Basalt of the ocean crust is melted as it goes beneath the continent in a zone of subduction.

10. Granite changes to gneiss under intense pressure caused by the movement of tectonic plates.

11. Lava erupts beneath the ocean at the Mid-Atlantic Ridge, where it cools to form basalt.

12. Pieces of gneiss from northern Canada were stuck to the bottom of a glacier. Part of the glacier broke off and floated away (ice berg) from the coast. Eventually the iceberg melted, dropping the gneiss onto the ocean floor.

13. Plant material was buried by a layer of sand in an ancient swamp in prehistoric eastern Montana. The swamp material became coal, sandwiched between layers of sandstone.

14. As India collided with Asia, seafloor sediments became shales and sandstones.

15. Magma from a volcanic center near present-day Cascade moved through cracks forming laccoliths, and dikes. The magma hardens forming a rock called porphyry.

16. The layer of Eagle Sandstone above the hardened porphyry is worn away by erosion and weathering, ending up as sand in the Mississippi Delta.

17. During an ice age winter the surface of Glacial Lake Great Falls became frozen. The water became calm, allowing clay particles worn off of granite from nearby mountains to settle onto the lake bottom.

18. Runoff from a thunderstorm washes a piece of quartzite from a cliff in Mann Gulch into Lower Holter Lake.

19. Pieces of andesite from the Elkhorn Mountains end up as gravel along Prickly Pear Creek in East Helena.

20. Glaciers transport pieces of quartzite from northern Canada to north-central Montana, where the quartzite cobbles are deposited in the Milk River valley. (Native Americans used come of these cobbles as boiling stones.)