



NAME: _____



DATE: _____ CLASS: _____

Igneous Rocks Earth Science Review Assignment

Directions: Refer to the **Igneous Rocks Reference Table** that appears on page 5 and answer all questions placing your answers in the spaces provided. Unless directed otherwise, staple your pages.

1. An important key to classifying igneous rocks is their **Environment of Formation**, in other words where the rock originally solidified from magma or lava. What are the names of the 2 major classification groups for igneous rocks that are based on where the rock formed? Include the alternate name (in parenthesis) for each group.

_____ and _____

2. Is Granite intrusive or extrusive? _____

3. Is Basalt intrusive or extrusive? _____

4. Obsidian:

4a. Is Obsidian intrusive or extrusive? _____

4b. What is Obsidian's texture? _____

5. Cooling history of an igneous rock, in other words, the time it takes for the rock to solidify from magma or lava, determines the size of the crystals (minerals) in the rock.

Rocks that cool underground cool more slowly and have larger crystals.

Rocks that cool above ground cool more quickly and have smaller crystals or no visible crystals.

a. Look at the **Grain Size** and **Texture** columns.

Which igneous rocks tend to be coarser in texture, with larger mineral crystals...intrusive or extrusive rocks?

b. What can be said of intrusive Igneous Rocks as to whether they formed below or above Earth's surface?

c. What can be said of extrusive Igneous Rocks as to whether they formed below or above Earth's surface?

6. Can Gabbro contain the mineral Quartz? _____

7. Can Granite contain the mineral Olivine? _____

8. Name 2 intrusive rocks containing Potassium Feldspar and Quartz.

_____ and _____

9. Name 2 intrusive rocks containing Pyroxene and Olivine.

_____ and _____

10. What is the grain size of each of the following igneous rocks?

Andesite: _____

Gabbro: _____

Granite: _____

Rhyolite: _____

Obsidian: _____

Pumice: _____

11. A Light Colored Intrusive Rock:

a. Name one intrusive rock with a light color? _____

b. Is the rock felsic or mafic? _____

12. A Dark Colored Extrusive Rock:

a. Name one extrusive rock with a dark color? _____

b. Is the rock felsic or mafic? _____

13. Explain the relationship that exists between felsic rocks and their overall color.

14. Explain the relationship that exists between mafic rocks and their overall density.

15. Which intrusive rock has the highest density? _____

16. Name an extrusive rock that has a low density? _____

17. Name a rock which formed deep in the Earth that is composed of:
30% Quartz, 35% Orthoclase Feldspar, 25% Plagioclase Feldspar, 5% Biotite Mica and 5% Amphibole (Hornblende). Percentages are approximate and variable.

Rock Name: _____

18. Name a rock which formed on Earth's surface that is composed of:
15% Olivine, 20% Pyroxene, 45% Plagioclase Feldspar, 5% Biotite Mica and 15% Amphibole (Hornblende). Percentages are approximate and variable.

Rock Name: _____

19. Name a fine-grained rock with: no Potassium Feldspar (Orthoclase) and no Olivine.

Rock Name: _____

20. Vesicular Rocks:

a. Name a vesicular rock. _____

b. Where did it form? Above or below Earth's surface?

c. What caused the vesicles (holes) to form in this rock?

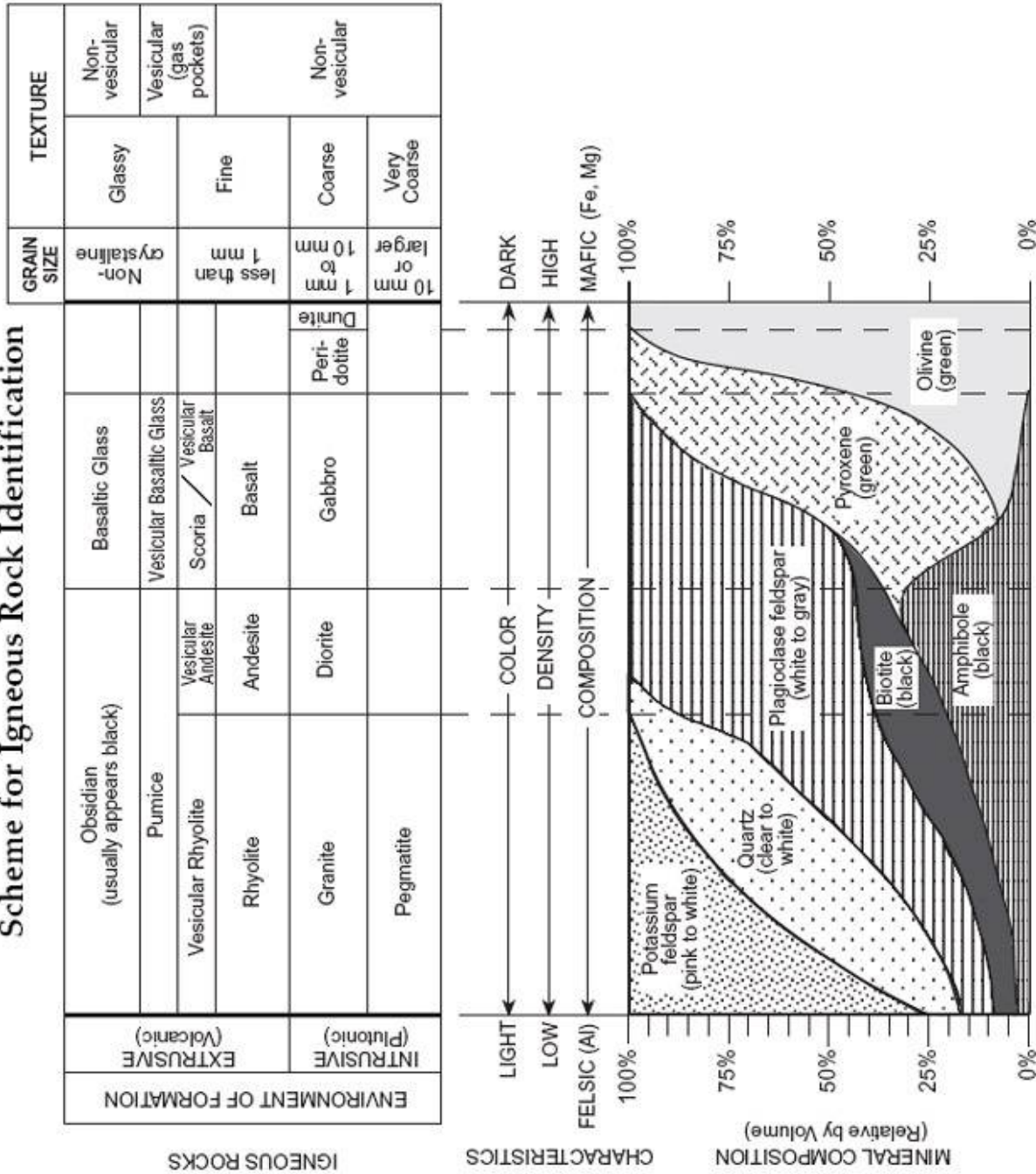
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Credit for Igneous Rocks Reference Table: The University of the State of New York; Board of Regents; Earth Science Regents Examinations

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Scheme for Igneous Rock Identification



Earth Science Reference Tables — 2001 Edition