Lab Activity: Igneous Rocks

INTRODUCTION:

Mineral composition and molten rock cooling rates results in the different types of igneous rocks.

Igneous rocks that form deep within the Earth form from magma and have larger crystal sizes. Adversely, igneous rocks that form on the outside tend to have smaller crystal sizes, glassy appearances and can sometimes have tiny gas pockets.

OBJECTIVE:

Learn how to identify igneous rocks based on their properties.

VOCABULARY:

Intrusive -

Extrusive -

Felsic -

Mafic -

Vesicular -

PROCEDURE:

1. For each unknown igneous rocks, identify the key observable characteristics.
2. Determine the name of the igneous rock based on the observed characteristics and the Earth Science Reference Tables.

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Crystal Size	Texture		Color	Density	Composition
☐ non-crystalline	☐ Glassy	☐ Non-vesicular	☐ Lighter	☐ Lower	☐ Felsic
☐ less than 1 mm	☐ Fine	☐ Vesicular	☐ Darker	☐ Higher	☐ Mafic
☐ 1 mm - 10 mm	☐ Coarse				
☐ 10 mm or larger	☐ Very Coarse				
Environment of Formation:	☐ Intrusive / Plutonic		☐ Extrusive / Volcanic		
Mineral Composition:	☐ Potassium feldspar ☐ Plagioclase feldspar		☐ Quartz ☐ Biotite	☐ Pyroxene ☐ Olivine	☐ Amphibole
Rock Name:					

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DISCUSSION QUESTIONS:

1. How is the size of the mineral crystals affected by the rate at which molten rock cools?

2. How can you determine if an igneous rock has an intrusive or extrusive origin?

3. How does the density of a light colored igneous rock differ from that of a dark?

4. What is the main difference between lava and magma?

5. How is a vesicular texture created?

CONCLUSION: On what basis are igneous rocks classified?