

UNIT 2: Earth Materials

LAB 2-3: IGNEOUS ROCK IDENTIFICATION

INTRODUCTION: The type of igneous rock formed when molten magma solidifies depends on the mineral composition and the rate at which the magma cools.

Igneous rocks which solidify deep underground are called **intrusive** or **plutonic**. They can be observed when erosion wears away overlying layers.

When magma reaches the surface it forms volcanic igneous rocks. The texture of these **extrusive** igneous rocks will vary greatly from ones formed by the same magma deep below the surface.

OBJECTIVE: You will investigate the properties by which igneous rocks can be identified.

VOCABULARY:

igneous:

intrusive:

extrusive:

felsic:

mafic:

lava:

magma:

texture:

porphyry:

PROCEDURE:

1. Obtain the igneous rock samples from your instructor.
2. Arrange your samples in the order demonstrated by your instructor.
3. Complete the Report Sheet using your samples, the Scheme for Igneous Rock Identification in the Appendix, and the reference material provided by your instructor.
4. Observe the large igneous rock samples provided.

REPORT SHEET

Sample No.	Color (Light or Dark)	Texture	How formed (Extrusive or Intrusive)	Minerals Present	Composition (Felsic or Mafic)	Rock Name
1						
2						
3						
4						
5						
6						
7						

DISCUSSION QUESTIONS: *(Answer in Complete Sentences)*

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

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

3. In general, how does the characteristic mineral composition of a light colored igneous rock differ from that of a dark colored igneous rock?

4. In general, how does the density of a light colored igneous rock differ from that of a dark colored igneous rock?

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

6. Describe a pegmatite texture.

CONCLUSION: On what basis are igneous rocks classified?