



Materi 1. Pengantar

Geologi – Geomorfologi Indonesia

Pembentukan Batuan

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Aktivitas Vulkanisme



Hotspot Vulcanism

gumpalan panas naik ke atas, membentuk gunung berapi pada kerak di atasnya



Divergent plate boundary Vulcanism

batuan mantel panas naik ke ruang di mana lempeng bergerak terpisah



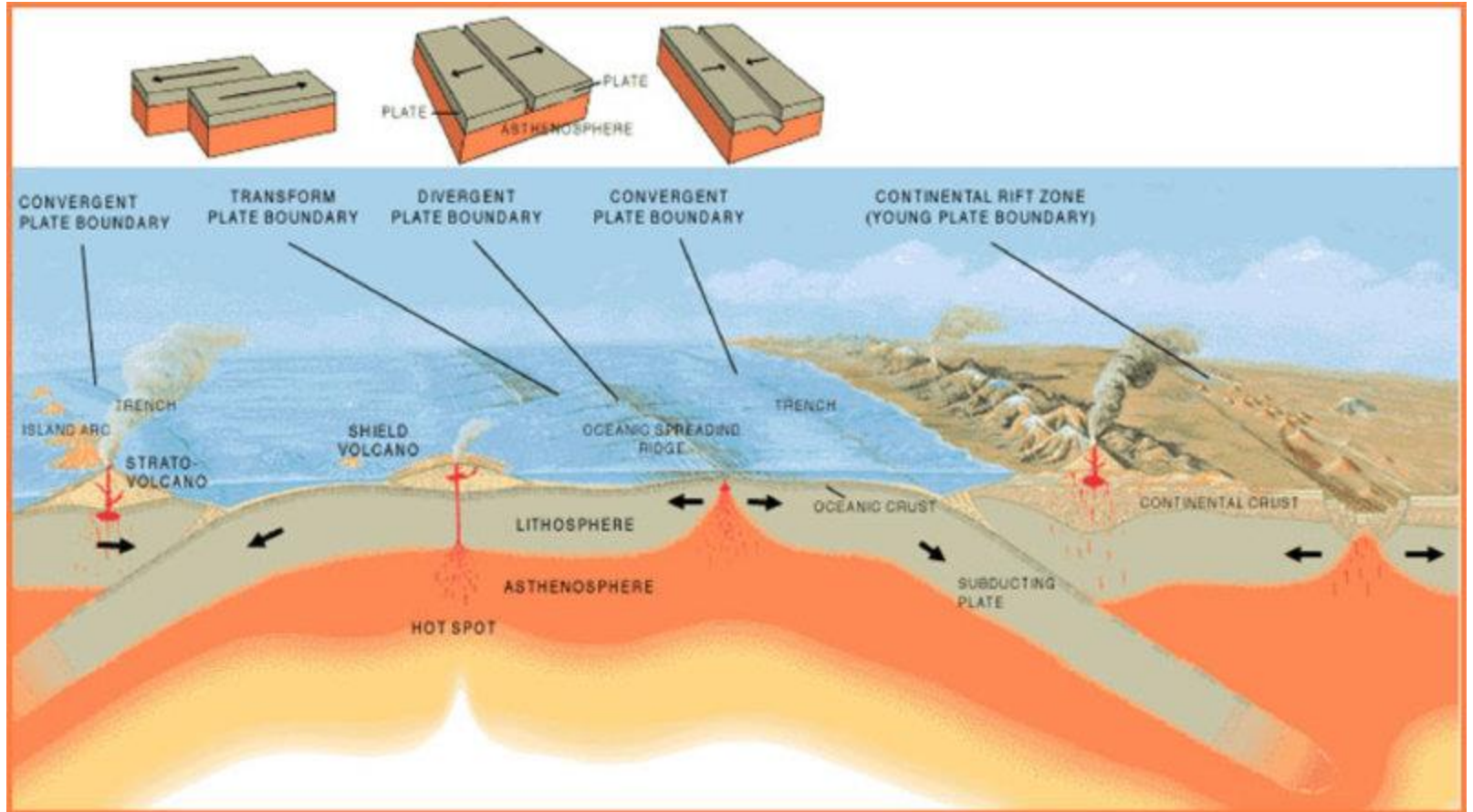
Island-Arc Vulcanism

Aktivitas vulkanik pada pulau yang terbentuk pada area pertemuan lempeng

<https://oceanexplorer.noaa.gov/facts/volcanic-hotspot.html>

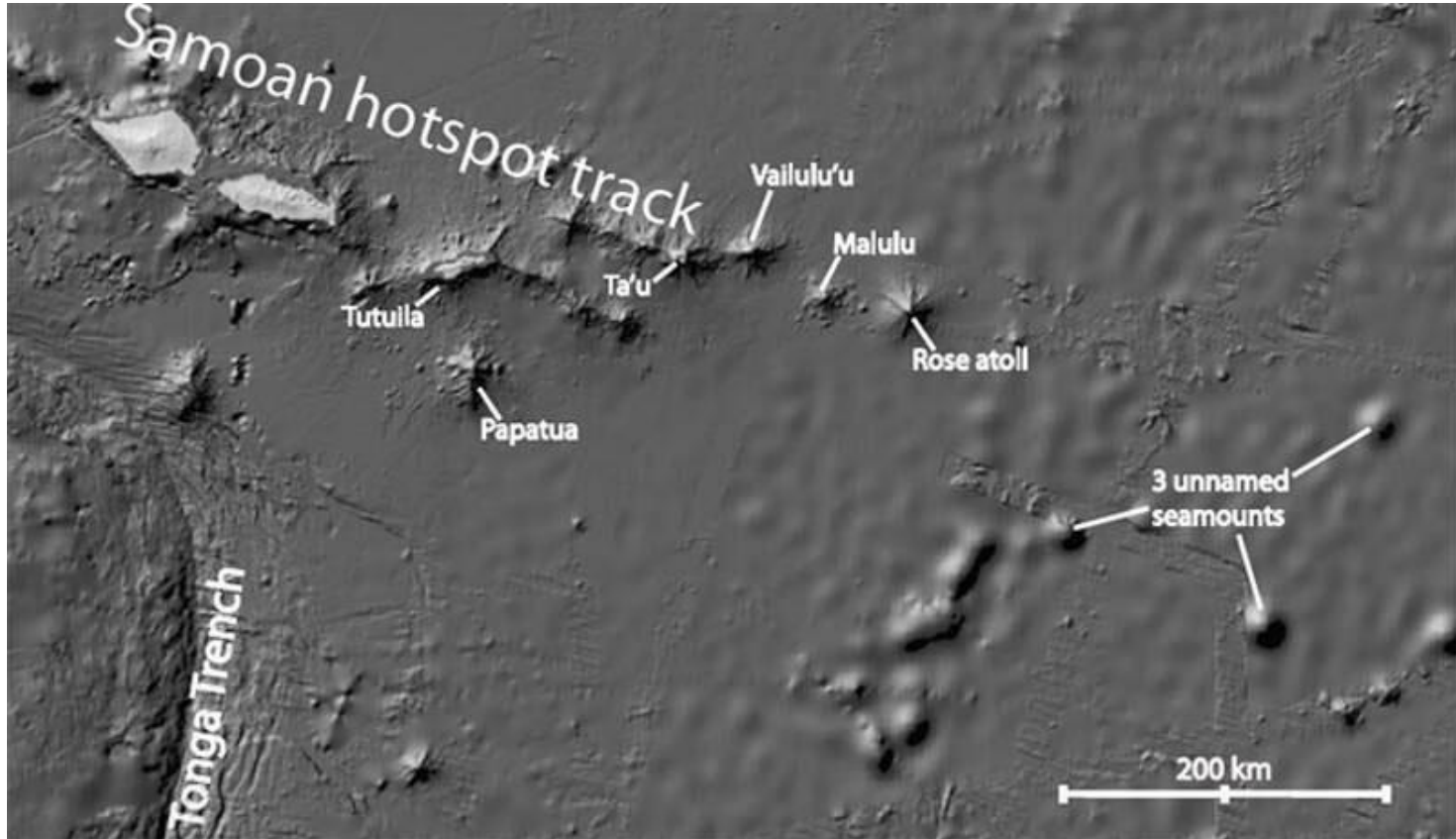
<https://courses.lumenlearning.com/geo/chapter/reading-volcanoes-at-plate-boundaries/>

Aktivitas Vulkanisme



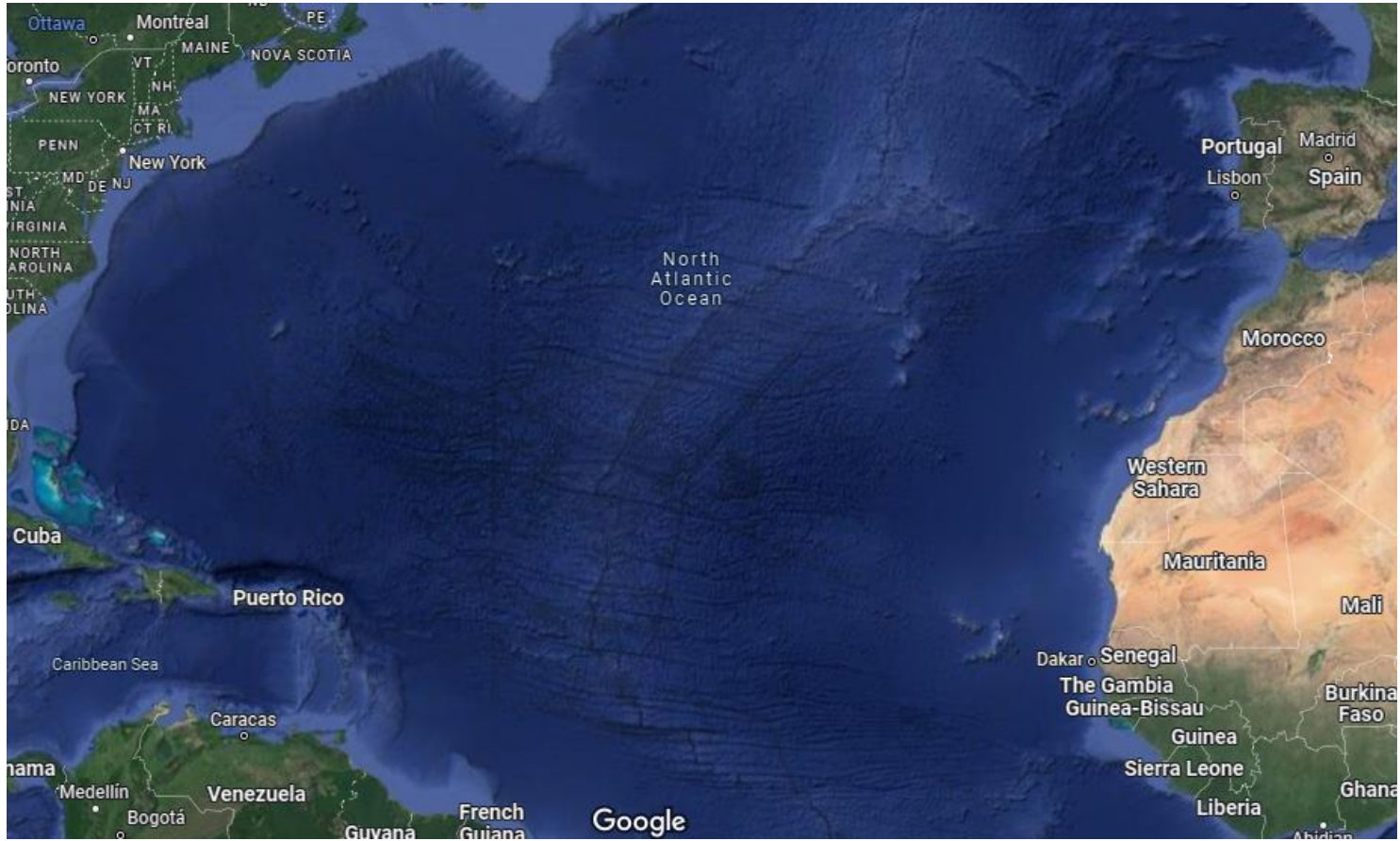
Aktivitas Vulkanisme

Hotspot Vulcanism



Aktivitas Vulkanisme

Divergent plate boundary Vulcanism



Aktivitas Vulkanisme

Island-Arc Vulcanism



Type Lava Flow

Pahoehoe (ropy)



Aa (Blocky / Clinker)



Batuan Beku

Jenis berdasar **lokasi pembekuan**

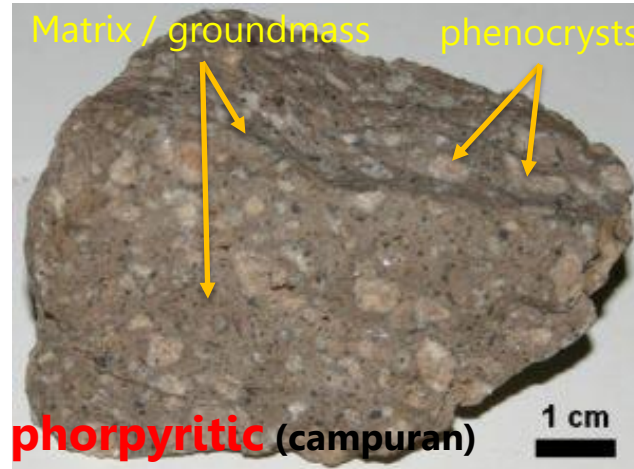
Sumber Gambar :

[https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_\(Johnson_Affolter_Inkenbrandt_and_Mosher\)/04%3A_Igneous_Processes_and_Volcanoes/4.01%3A_A_Classification_of_Igneous_Rocks](https://geo.libretexts.org/Bookshelves/Geology/Book%3A_An_Introduction_to_Geology_(Johnson_Affolter_Inkenbrandt_and_Mosher)/04%3A_Igneous_Processes_and_Volcanoes/4.01%3A_A_Classification_of_Igneous_Rocks)

☞ **Beku dalam (Instrusi/plutonik)** → Tekstur cenderung **phanerik** (kasar)

☞ **Beku gang** → Tekstur cenderung **phorpyritic** (campuran kasar & halus)

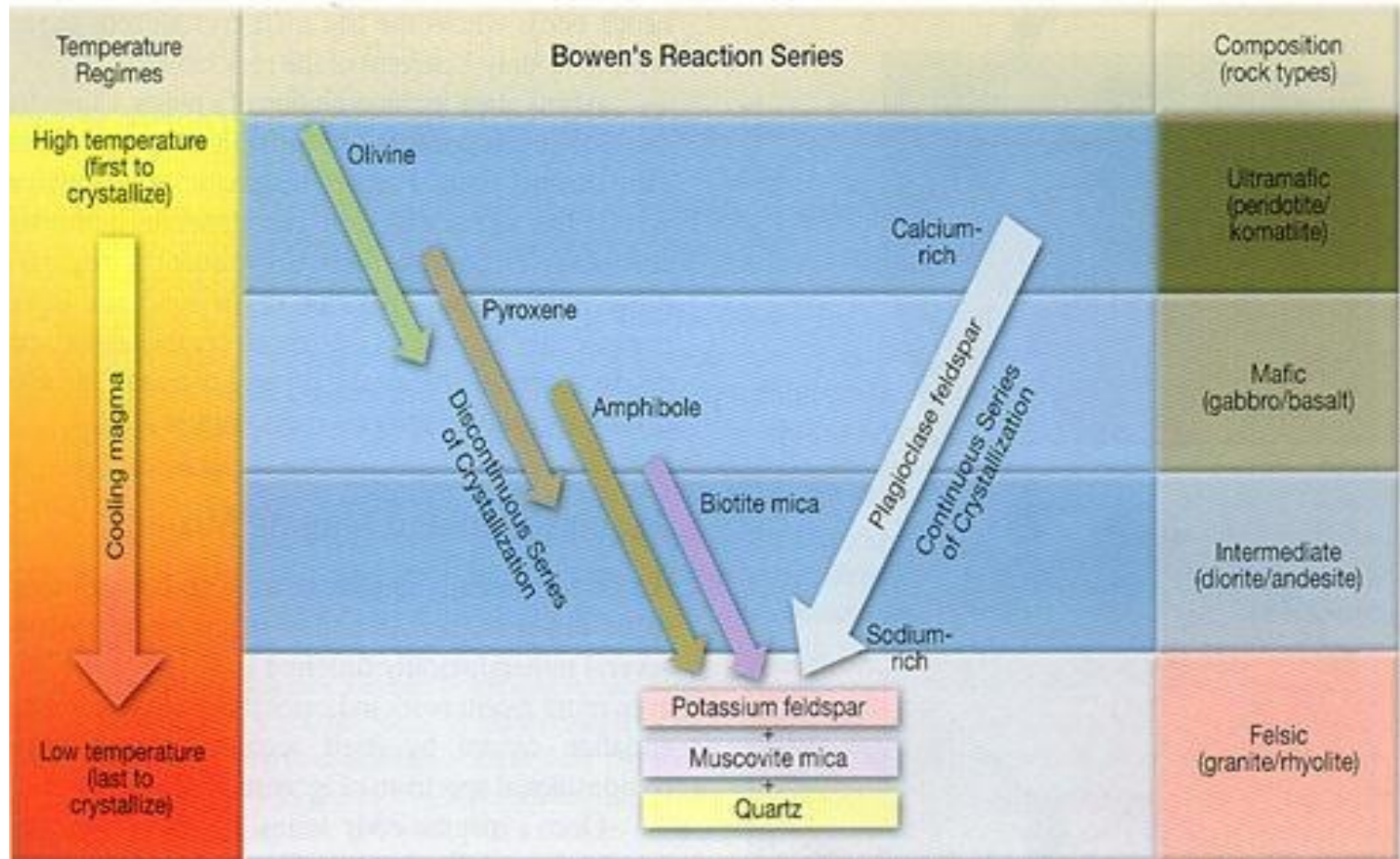
☞ **Beku luar (Ekstrusi/volcanic)** → Tekstur cenderung **aphanitik** (halus)



Batuan Beku

- Basa
- cair

- Asam
- Kental



Batuan Beku

Klasifikasi berdasar **Unsur kandungan**

»» Berdasar kandungan unsur **K, Na, Ca**

Batuan Alkali
Batuan Kapur Alkali

»» Berdasar kandungan unsur **SiO₂**

- Asam
- Kental
- cerah

Batuan Beku Asam → Felsic

Batuan Beku Intermediate → Intermediate

Batuan Beku Basa → Mafic

- Basa
- Cair
- Gelap

Batuan Beku Ultra Basa → Ultramafic

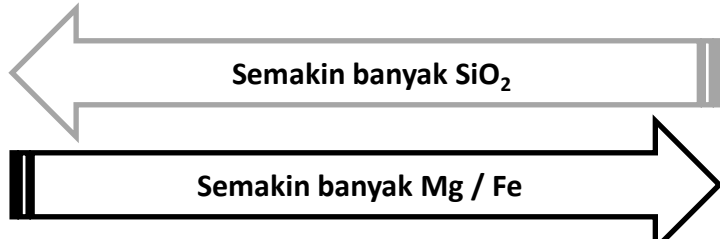
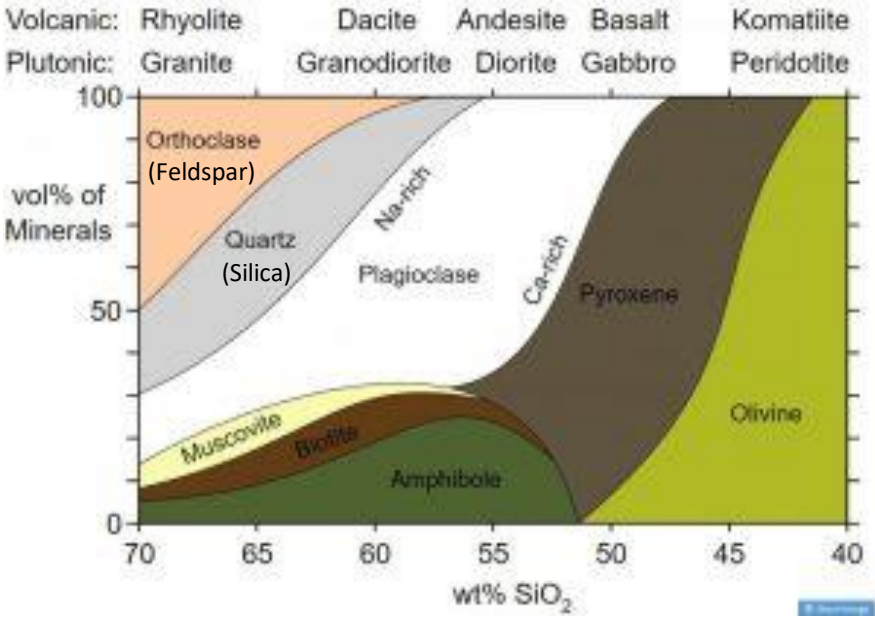
Batuan Beku

COMPOSITION

Felsic Intermediate mafic ultramafic



Match the texture with the composition of the rock to identify it.



TEXTURE

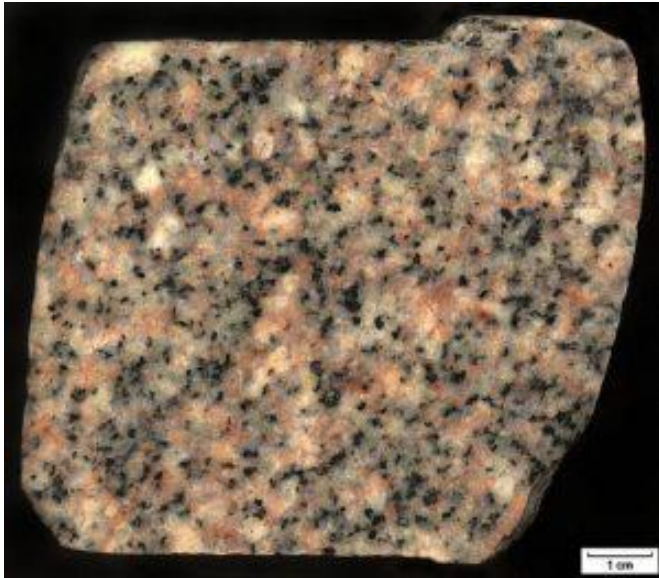
- Phaneritic (coarse grained)
- Aphanitic (fine grained)
- Porphyritic (large crystals in a fine matrix)
- Vesicular (bubbly or frothy)
- Glassy
- Pyroclastic (fragmental)

Granite	Diorite	Gabbro	Peridotite
Rhyolite	Andesite	Basalt	
Porphyritic Rhyolite	Porphyritic Andesite	Porphyritic Basalt	
Pumice		Scoria	
Obsidian			
Rhyolitic Tuff or Volcanic Breccia	Andesitic Tuff or Volcanic Breccia	Basaltic Tuff or Volcanic Breccia	

Batuan Beku

Felsic Rock

Plutonik



Granite

Vulkanik



Rhyolite

Batuan Beku

Intermediate Rock

Plutonik



Diorite

Vulkanik



Andesite

Batuan Beku

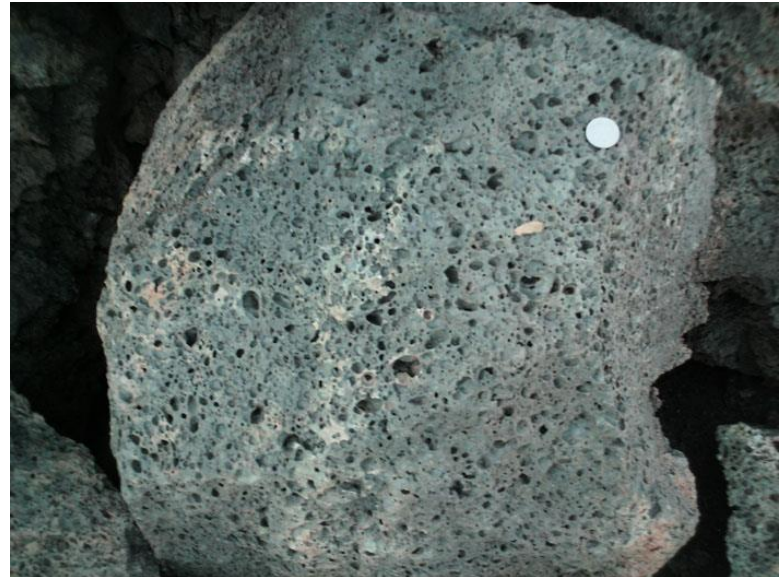
Mafic Rock

Plutonik



Gabbro

Vulkanik



Basal

Terima kasih