Naming igneous rocks

- **Take a deep breath, ask questions, be patient.**

1. Define texture
2. Identify minerals
3. Estimate the % of each mineral within the rock
4. Use known textures and mineral %'s with the Flow chart for Ig. Rock Classification to name the rock.

Textures

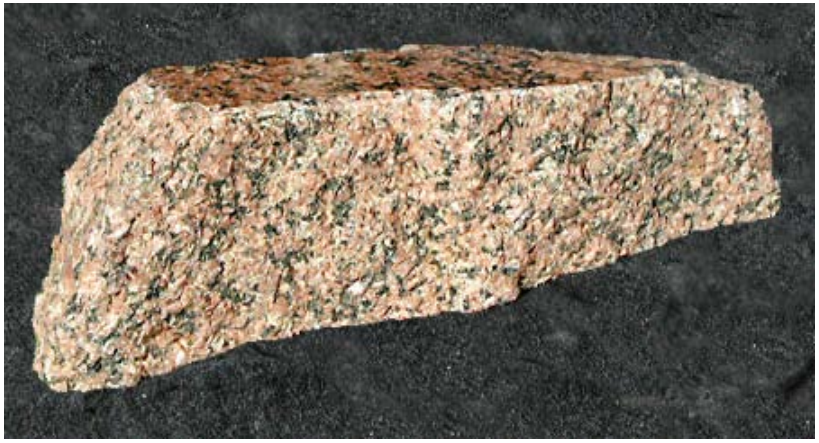
- Phaneritic
- Aphanitic
- Porphyritic
- Vesicular

Aphanitic Vs. Phaneritic

- Determined from the groundmass

Aphanitic

Phaneritic

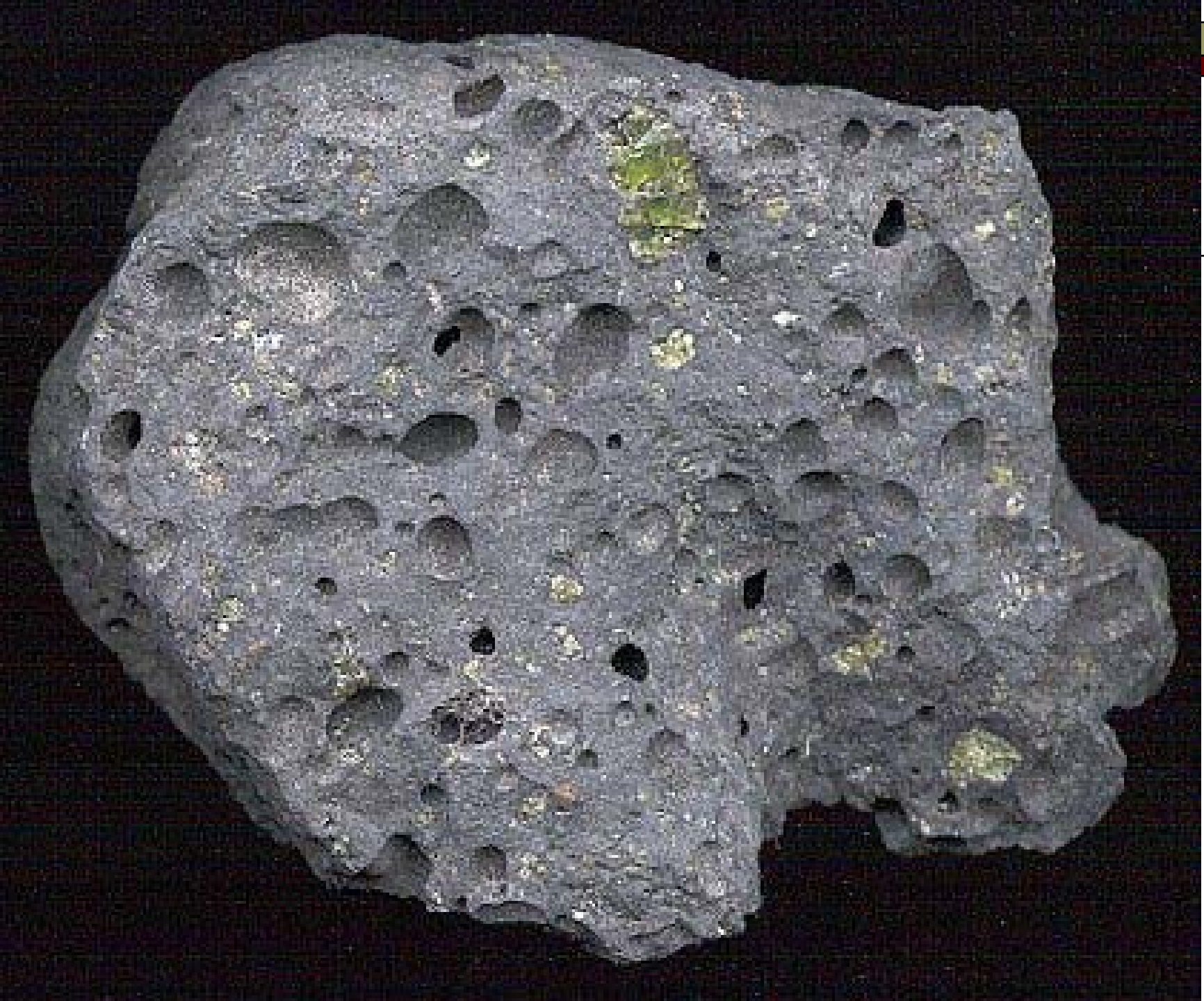


Porphyritic

- Big crystals (phenocrysts) set within smaller crystals.

Vesicular

- Cavities or holes in igneous extrusive rock

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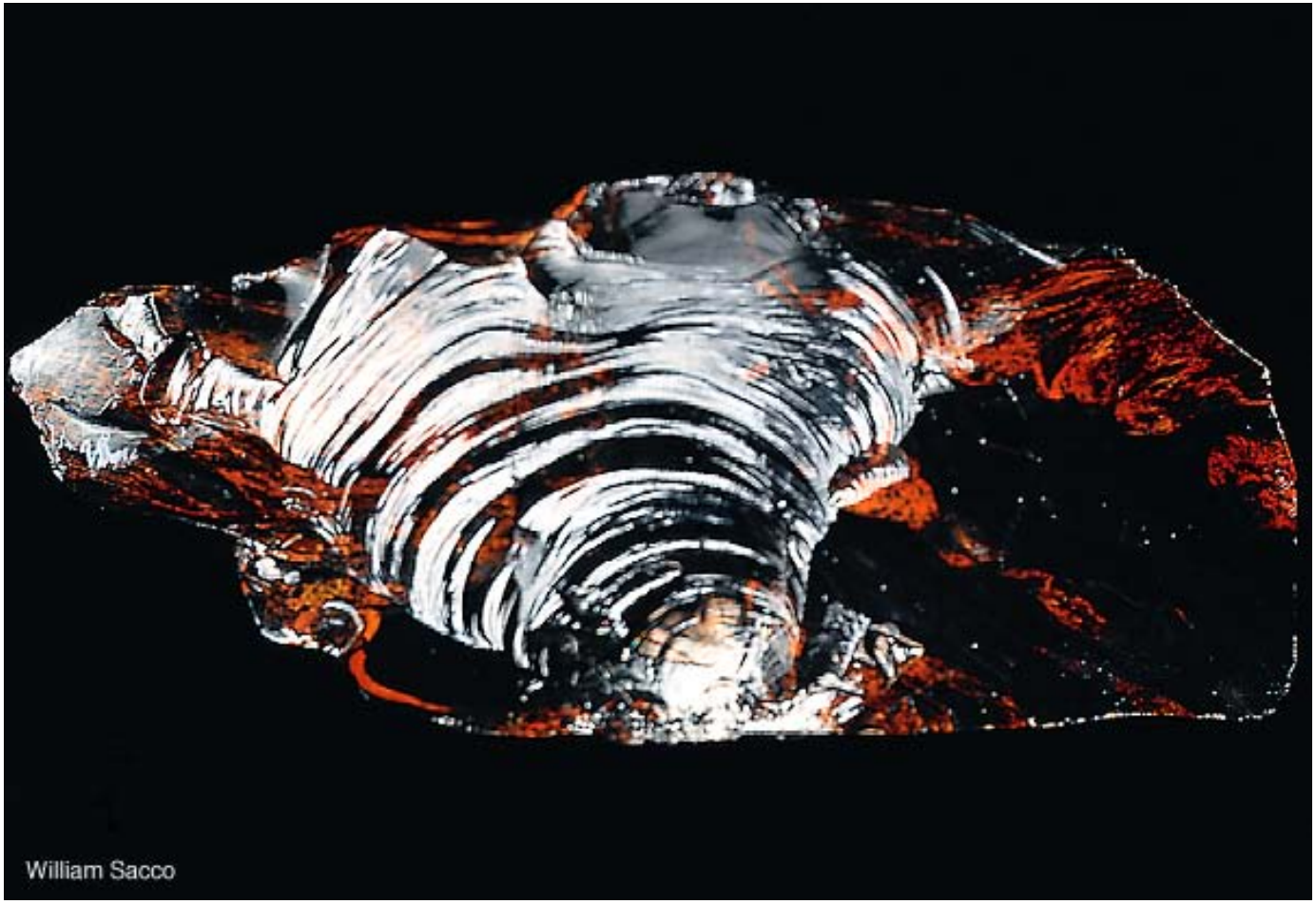
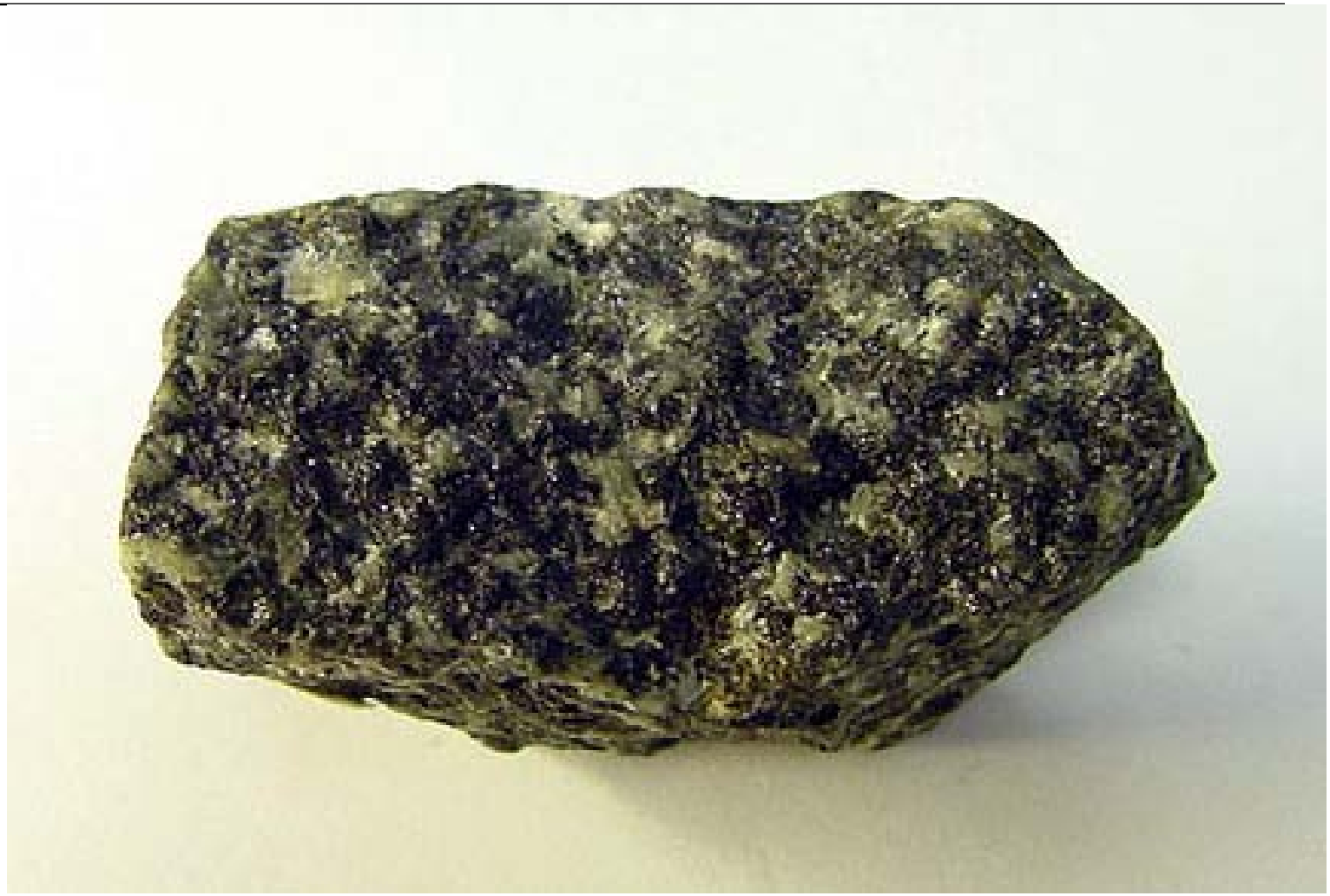
Glassy



An example

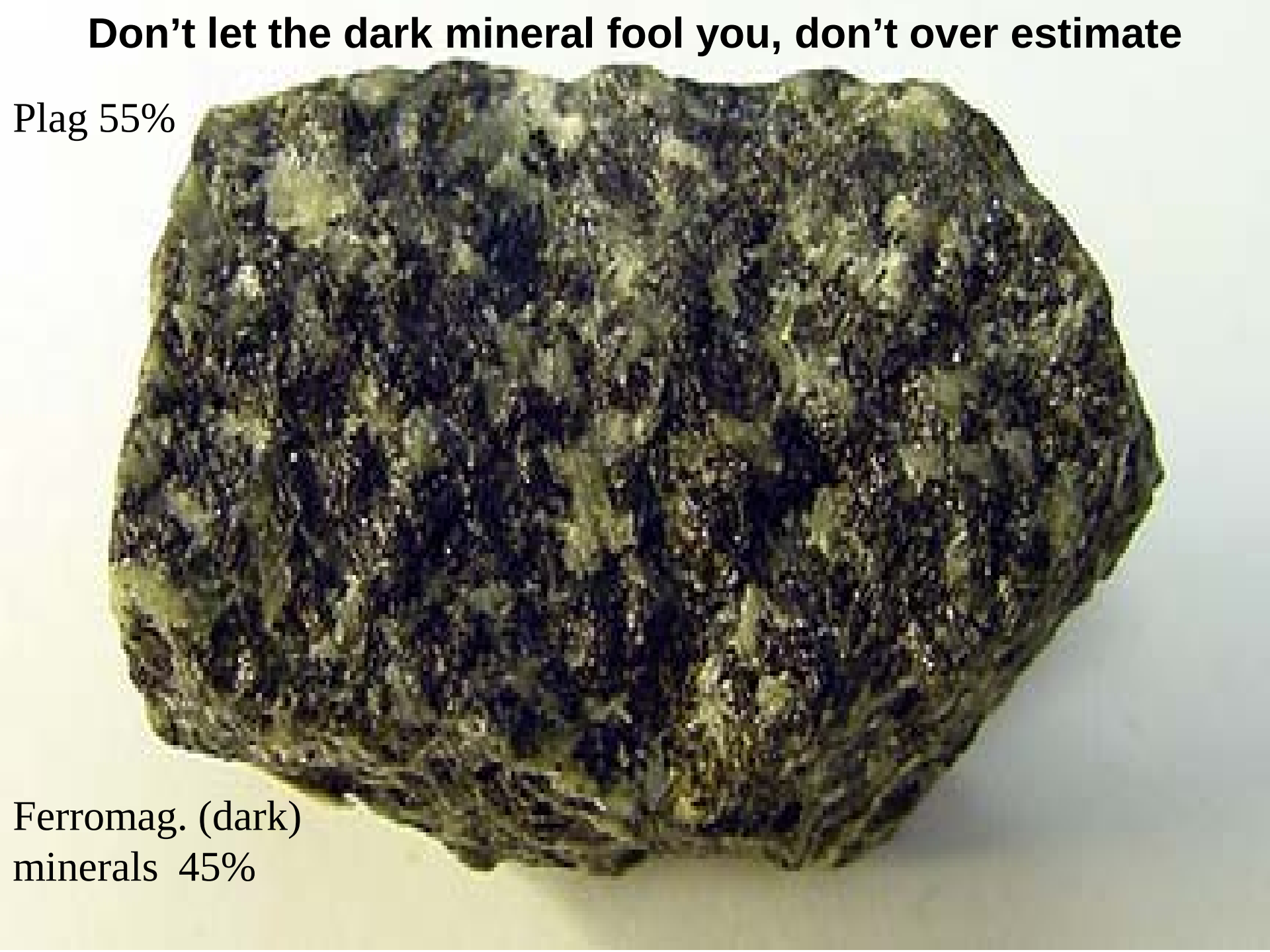
Texture



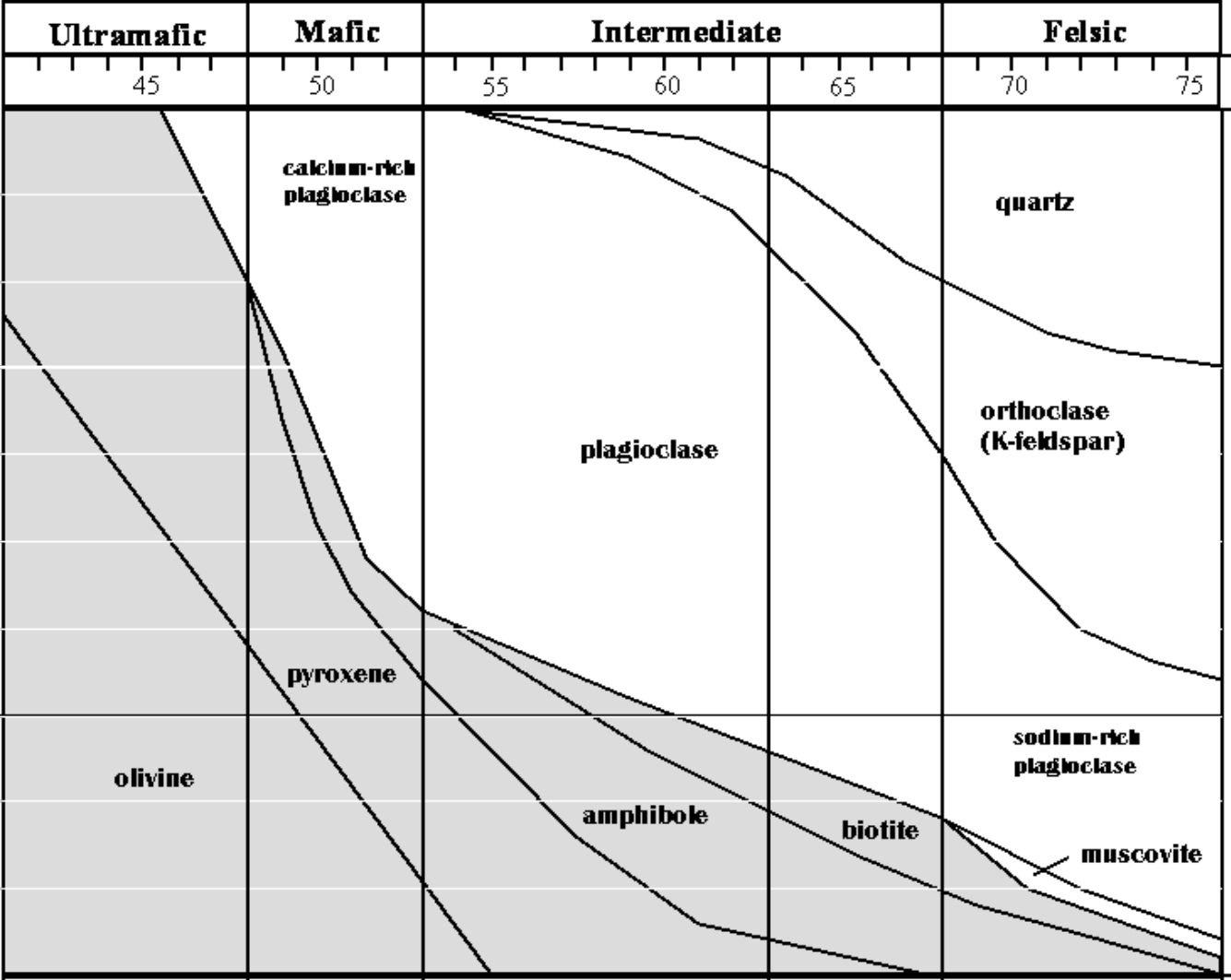

Plagioclase
Aguite/hornblende
Biotite

Don’t let the dark mineral fool you, don’t over estimate

Plag 55%



Ferromag. (dark) minerals 45%



Modifiers

Porphyritic Texture: two distinct size populations of crystals (either porphyritic phaneritic or porphyritic aphanitic)

phenocrysts: the larger crystals
groundmass: the smaller crystals

< 5 % phenocrysts: no modifer

5-25 % phenocrysts: use porphyritic as an adjective (e.g. porphyritic andesite)

> 25 % phenocrysts: use porphyry in the name (e.g. andesite porphyry)

Vesicular Texture: if the rock contains some vesicles (but not a high %), use vesicular as an adjective (e.g. vesicular basalt)

Pegmatite: rocks dominated by very large crystals (>2.5 cm); "pegmatite" is added to the name (e.g. granite pegmatite)

TEXTURES

Peridotite	Gabbro	Diorite	Granodiorite	Granite	**Phaneritic**	see "Modifiers" for possible additions to the basic rock name
	Basalt	Andesite	Dacite	Rhyolite	**Aphanitic**	
	Scoria		Pumice		**Very Vesicular**	
			Obsidian		**Glassy**	
	Tuff (clasts mostly < 2 mm), Volcanic Breccia (contains large angular clasts)				**Pyroclastic**	