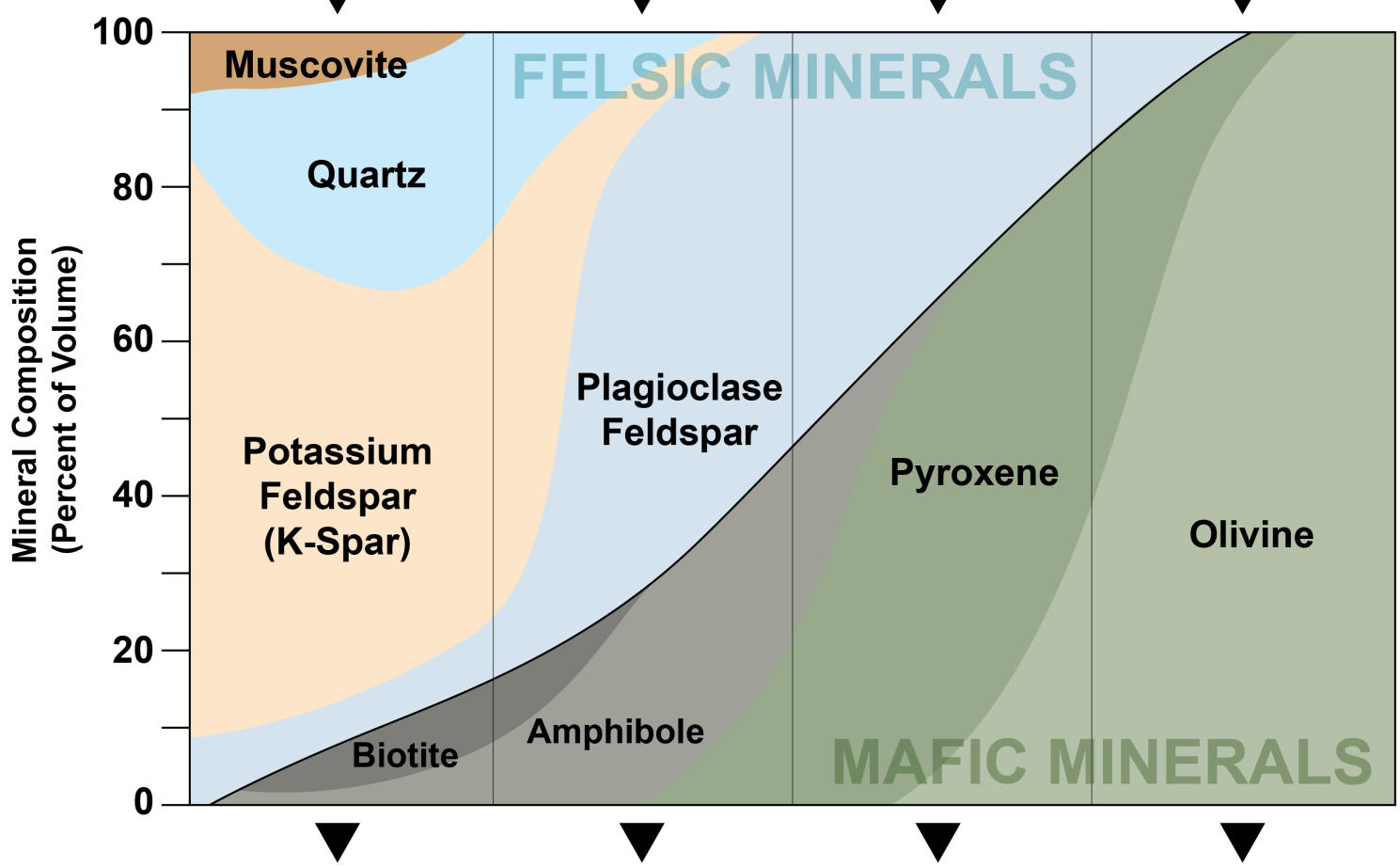
1. Mafic Color Index

Felsic	Intermediate	Mafic	Ultramafic
(0-15% Mafic Crystals)	(15-45% Mafic Crystals)	(45-85% Mafic Crystals)	(>85% Mafic Crystals)

2. Minerals



3. Textures

		Felsic	Intermediate	Mafic	Ultramafic
Intrusive Origin	PEGMATITIC	PEGMATITIC GRANITE	PEGMATITIC DIORITE	PEGMATITIC GABBRO	PEGMATITIC PERIDOTITE
	PHANERITIC	GRANITE	DIORITE	GABBRO	PERIDOTITE
	PHENOCRYST-DOMINATED	PORPHYRITIC GRANITE	PORPHYRITIC DIORITE	PORPHYRITIC GABBRO	PORPHYRITIC PERIDOTITE
	MATRIX DOMINATED	PORPHYRITIC RHYOLITE	PORPHYRITIC ANDESITE	PORPHYRITIC BASALT	KOMATITE
Extrusive Origin	APHANITIC	RHYOLITE	ANDESITE	BASALT	
	GLASSY	OBSIDIAN			
	VESICULAR	PUMICE		SCORIA VESICULAR BASALT	
	PYROCLASTIC OR FRAGMENTED	VOLCANIC TUFF (FRAGMENTS <2MM) VOLCANIC BRECCIA (FRAGMENTS >2MM)			

Igneous rocks are classified based on: 1) the color index (% of mafic minerals); 2) mineral composition (types and relative abundance of minerals); and 3) texture. You will need to reference this chart in order to identify rocks in the Igneous Rock Identification exercise.

Need help with the Igneous Rock Chart?

The following step-by-step example is a guide for how to identify your igneous rock samples and how to use the identification chart in Figure 6:

You are holding a lightly colored rock with grains that are all about the same size and are visible to the naked eye (~3 mm). In order to identify the rock you would:

Step 1: Use the Mafic Color Index (#1 in Figure 6) to determine what type of rock you have based on the color shade. In this case, the rock is light enough to be considered felsic.

Step 2: Follow the felsic category of the Mafic Color Index downward into the Minerals section (#2 in Figure 6). This section of the chart indicates that a felsic rock should contain varying percentages of muscovite, quartz, potassium feldspar, and plagioclase, whereas a mafic rock would contain varying percentages of plagioclase feldspar, amphibole, pyroxene, and olivine. Based upon the minerals you identify in the rock using the minerals property tests, you determine that identifying the rock as felsic is correct.

Step 3: From the Minerals section (2), follow the chart down into the Textures section (3). Since the rock has grains that are all about the same size and are visible to the naked eye (1–10 mm), you can determine that the rock is a phaneritic rock of intrusive origin. Following "felsic" down from the Mafic Color Index (1) and Minerals section (2), and then following the phaneritic texture to the right from the Textures (3) category, you can determine:

In this example the rock is a **granite**.