

Chapter 3

Use with Section 2

ENRICHMENT

● Igneous Rocks

Crystallization

This chart represents the order in which different minerals crystallize from a cooling magma or lava to form igneous rocks. Both mineral names and the rocks they form are shown. Use the chart to answer the questions.

Crystallization	Iron-magnesium silicate minerals	Feldspar minerals	Rock names
First to crystallize ↓ Decreasing temperature ↓ Last to crystallize	Olivine ↓ Pyroxene	Plagioclase (calcium feldspar) ↓	Gabbro, basalt
	Amphibole ↓ Biotite	Plagioclase (sodium feldspar) ↓	Diorite, andesite
		Orthoclase (potassium feldspar) ↓ Quartz	Granite, rhyolite

- Which minerals are the first to crystallize from cooling magma? _____
- What kind of rocks are formed by these minerals? _____
- Which mineral crystallizes at the lowest temperature? _____
- Which mineral, pyroxene or orthoclase, crystallizes from magma first? _____
- Which feldspar mineral is found in granite? _____
- What minerals form the rocks diorite and andesite? _____
- Minerals higher in silica content crystallize from magma at lower temperatures. Which magma, basaltic or granitic, is higher in silica content? _____
- Magma low in silica content flows more easily. Which kind of lava, basaltic lava or granitic, flows faster? _____