Bowen's Reaction Series and Igneous Rock Classification
Based on Texture/Cooling History and Color/Composition

**Cooling History**

<table>
<thead>
<tr>
<th>SLOW</th>
<th>FAST</th>
<th>VERY FAST</th>
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<tbody>
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<td>(Thousands of Years or more)</td>
<td>(Days to weeks or months)</td>
<td>(Hours to days)</td>
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**Texture**

- **Phaneritic**: Crystals large enough to be seen by eye unaided. This range from small to very large crystals.
- **Aphanitic**: No crystals can be seen. Looks fine grained and uniform.
- **Porphyritic with phenocrysts**: Two crystal types, one large enough to be seen, included in a fine grained (aphanitic) groundmass.
- **Cellular**: Porous, from tiny to quite large. Rock usually feels light weight. Colors typically gray to red or black.

**Color/Composition**

- **MAFIC**: Dark Color
  - **Gabbro**
  - **Basalt** (porphyry)
  - **Scoria**

- **INTERMEDIATE**: Intermediate Color
  - **Diorite**
  - **Andesite** (porphyry)

- **FELSIC**: Light Color
  - **Granite**
  - **Rhyolite** (porphyry)
  - **Pumice**
  - **Obsidian**