PHYLLO-, NESO- & SOR0SILICATES

Phyllosilicates consist of silica tetrahedra linked by sharing three of their four oxygen to form 'sheets'. *Nesosilicates* are characterized by isolated tetrahedra of SiO_4, linked by cations. In general, nesosilicates have dense atomic packing, giving rise to high specific gravity and hardness. They form important mineral groups in both igneous and metamorphic rocks. *Sorosilicates* are formed by the linking of two SiO_4 tetrahedra through the sharing of one oxygen. Very few minerals form in this class of silicates.

Examine both hand sample and thin sections (where available) for nesosilicates, sorosilicates and phyllosilicates.

Use mineral data sheets to record the properties of each mineral.

Phyllosilicates These include **clay** minerals (**kaolinite**), the **chlorite** group, the **mica** group, the **serpentine** group, and **talc**. Samples available in thin section include **muscovite** (M97, 975), **biotite** (44-5170, OP1966), **phlogopite** (44-5031), **chlorite** (44-5175, M73), **serpentine** (M71, M72), and **lepidolite** (M69).

Nesosilicates The important minerals include **olivine** (44-4173, 75BUR-2)**, andalusite** (6814, M8?), **sillimanite** (90K4-1), **kyanite** (M9. 44-5070), **staurolite** (M19), **garnet group** (OP1773, 44-5058)**, zircon** (M49, 44-4188) and **sphene** (44-4183)**.**

Sorosilicates The most important minerals belong to the **epidote** (44-5181, 44-0140(4)) group.