

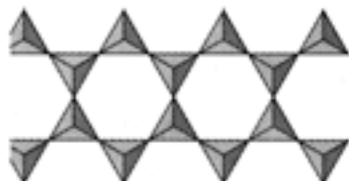
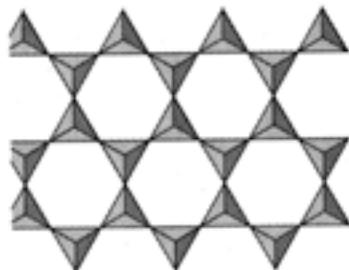



Major Silicate Structures

GEOMETRY OF LINKAGE OF SiO_4 TETRAHEDRA	Si:O Ratio		EXAMPLE MINERAL	CHEMICAL COMPOSITION
<i>Isolated tetrahedra:</i> No sharing of oxygens between tetrahedra; individual tetrahedra linked to each other by bonding to cation between them	1:4		Olivine	Magnesium-iron silicate
<i>Single chains:</i> Each tetrahedron linked to two others by shared oxygens; chains bonded by cations	1:3		Pyroxene	Magnesium-iron silicate
<i>Double chains:</i> Two parallel chains joined by shared oxygens between every other pair of tetrahedra; the other pairs of tetrahedra bond to cations that lie between the chains	4:11		Amphibole	Calcium-magnesium-iron silicate
<i>Sheets:</i> Each tetrahedron linked to three others by shared oxygens; sheets bonded by cations	2:5		Kaolinite Mica (muscovite)	Aluminum silicate Potassium-aluminum silicate
<i>Frameworks:</i> Each tetrahedron shares all its oxygens with other SiO_4 tetrahedra (in quartz) or AlO_4 tetrahedra	1:2		Feldspar (orthoclase) Quartz	Potassium-aluminum silicate Silicon dioxide