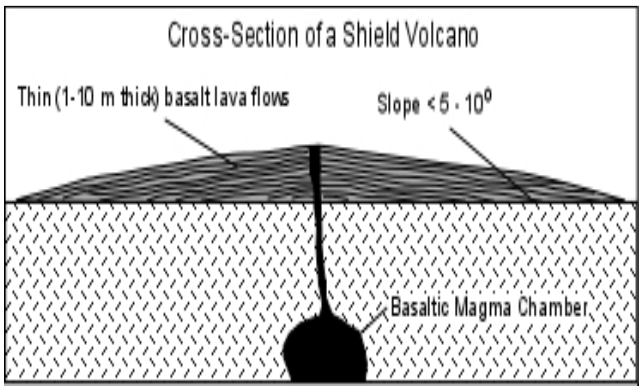
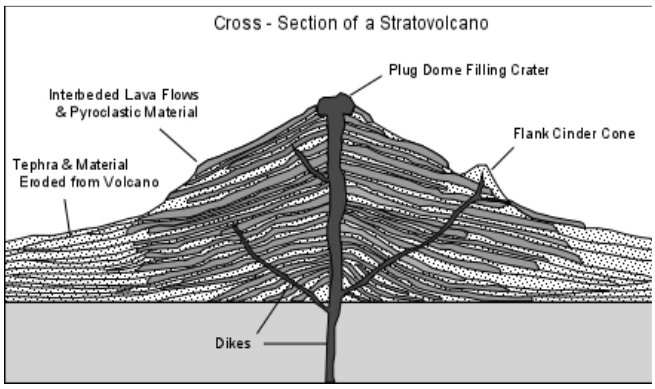
COMPARING SHIELD AND STRATO VOLCANOES

SHIELD VOLCANO	STRATO VOLCANO
	
• A shield volcano is characterised by gentle slopes of around 5-10 degrees. • Shield volcanoes are composed almost entirely of relatively thin lava flows built up over a central vent. • Most shields were formed by low viscosity basaltic magma (basic) that flows easily down slope away form the summit vent. • The low viscosity of the magma allows the lava to travel down slope on a gentle slope, but as it cools and its viscosity increases, its thickness builds up on the lower slopes giving a somewhat steeper lower slope. • Most shield volcanoes have a roughly circular or oval shape in map view. • Very little pyroclastic material is found within a shield volcano, due to the low gas content of the lava and low levels of explosivity. • Shield volcanoes thus form by relatively non-explosive eruptions of low viscosity basaltic magma.	• Stratovolcanoes have steep slopes of 30 degrees. • They show inter-layering of lava flows and pyroclastic material, which is why they are sometimes called composite volcanoes. Pyroclastic material can make up over 50% of the volume of a stratovolcano. • Lavas and pyroclastics are usually andesitic to rhyolitic in composition (acidic) • Due to the higher viscosity of magmas erupted from these volcanoes, they are usually more explosive than shield volcanoes. • Stratovolcanoes sometimes have a crater at the summit that is formed by explosive ejection of material from a central vent. • Long periods of repose (times of inactivity) lasting for hundreds to thousands of years, make this type of volcano particularly dangerous, since many times they have shown no historic activity, and people are reluctant to heed warnings about possible eruptions.
BASIC LAVA	ACID LAVA
LOW IN SILICA 45%	HIGH IN SILICA 75%
HIGH TEMPERATURE 1500C	LOW TEMPERATURE 900c
LOW VISCOSITY (RUNNY)	HIGH VISCOSITY (STICKY)
EFFUSIVE (QUIET)	EXPLOSIVE
FREQUENT ERUPTIONS : MAY BE CONTINUOUS ERUPTIONS	INFREQUENT ERUPTIONS (1OO'S OR 1000'S OF YEARS BETWEEN ERUPTIONS
LOW GAS CONTENT	HIGH GAS CONTENT
GENTLE SIDED VOLCANO (5-10 DEGREES)	STEEP SIDED VOLCANO (30 DEGREES)
LAVA	LAVA PYROCLASTICS AND ASH
PLATE SETTING : CONSTRUCTIVE , DIVERGING PLATE BOUNDARY OR HOT SPOT (MANTLE/MAGMA PLUME) Mauna Loa on Hawaii	PLATE SETTING : DESTRUCTIVE , CONVERGING PLATE BOUNDARY, WHERE SUBDUCTION IS TAKING PLACE Mt St Helens in Washington state USA Mt Pinatubo, Philippines