HIGHER GCSE UNIT SUMMARY: UNIT 12: Similarity and congruence in 2D and 3D

12) **Similarity and congruence in 2D and 3D**

Unit Description	Taught	Revision Priority
Understand and use SSS, SAS, ASA and RHS conditions to prove the congruence of triangles using formal arguments, and to verify standard ruler and pair of compasses constructions;		
Solve angle problems by first proving congruence;		
Understand similarity of triangles and of other plane shapes, and use this to make geometric inferences;		
Prove that two shapes are similar by showing that all corresponding angles are equal in size and/or lengths of sides are in the same ratio/one is an enlargement of the other, giving the scale factor;		
Use formal geometric proof for the similarity of two given triangles;		
Understand the effect of enlargement on angles, perimeter, area and volume of shapes and solids;		
Identify the scale factor of an enlargement of a similar shape as the ratio of the lengths of two corresponding sides, using integer or fraction scale factors;		
Write the lengths, areas and volumes of two shapes as ratios in their simplest form;		
Find missing lengths, areas and volumes in similar 3D solids;		
Know the relationships between linear, area and volume scale factors of mathematically similar shapes and solids;		
Use the relationship between enlargement and areas and volumes of simple shapes and solids;		
Solve problems involving frustums of cones where you have to find missing lengths first using similar triangles.		