Playground Design:

**Brief:**
Your school has received money to build a new playground which is to take up a 50m X 30m space. Your job is to design the new playground. You must include the following 3 plans:

1. A plan of your design which uses a variety of shapes (triangles, quadrilaterals). You can use regular and irregular shapes. They can be garden beds, paths, soft fall for playground equipment etc. Your plan must clearly show the size of each shape.
2. A plan that gives details of the shapes you have used in your playground.
3. A plan that shows the area of each different type of land use (e.g. 18m² of concrete paths).

**Key questions to think about:**
1. Where will you obtain information about playgrounds and playground equipment?
2. What does a plan look like and what conventions do you need to use?
3. How are scale drawings created? What scale will you use?
4. What different types of areas will you include in your playground design?
5. What equipment will you include in your design?
6. What shapes will you include in your design?
7. How will you make sure that your design clearly shows how much space each shape will take up?
8. What are the properties of the 2D and 3D shapes you have used in your design?
9. What area of land is taken up by different uses? How will you calculate the area for each use?
10. What volume of concrete, soil, soft fall etc. will you need? How will you calculate the volume?
11. How are the measurements for length, area and volume related to the attributes of shapes?

**What you need to hand in:**
1. A plan of your playground design. It needs to include at least one path and the locations of other areas such as playground equipment and gardens. Some tessellating shapes need to be included in your design. It should be coloured appropriately with each colour explained in your key. You will need to include mapping conventions such as a scale, grid references, a key, a compass or arrow pointing to North and labels for each of the features.
2. A second plan showing the geometric properties of the shapes you have used. This will include: the size of each angle; the length of each side; the congruent and parallel sides marked.
3. An area usage plan with the areas of each different type of land use marked and calculated. This will also include the volume of material needed e.g. concrete, sand, soil, soft fall.
4. Yr6. Make comparisons between the areas for each of the elements by working out the fraction of the whole playground that they take up. Demonstrate this comparison using a number line or pie graph showing the relative size of each fraction.