



**Kent College Pembury  
13+ Mathematics Syllabus**

Girls who enter at Year 9 should be familiar with the following skills:

- Percentage increases.
- Rotations, reflections and translations.
- Ratios.
- Addition, subtraction, multiplication of fractions.
- Conversions between fractions, decimals and percentages.
- Significant numbers and decimal places.
- Directed numbers.
- Solving equations with brackets.
- Finding algebraic formulae from number patterns.
- Drawing graphs of straight lines from formulae.
- Angles formed with parallel lines.
- Angles in polygons.
- 2D drawings of 3D objects.
- Mean, mode, median and range.

For 11+ and 12+ entrance girls would be expected to have covered the following:

- Know all their multiplication tables.
- Understand place value.
- Be capable of addition, subtraction, multiplication and division with whole numbers and decimals. They should be able to apply these skills to practical topics.
- Have studied time with the 24-hour clock.
- Know the British money system.
- Understand the concept of equivalent fractions and understand what fractions represent. They should also understand the concept of proportion.
- Know how percentages are related to fractions. Simple examples such as 10% and 25% should be familiar.
- Be capable of performing long multiplication and long division, showing their working.
- Know the meaning of the words "Multiple" and "Factor".
- Understand how to convert metric units and have learnt the relevant units.

- Be capable of exploring linear number patterns and explaining rules in words or possibly symbols.
- Understand the concepts of perimeter, area and volume. They should be able to find areas of shapes made up of combinations of rectangles.
- Be able to describe the line symmetry and rotational symmetry of an object.
- Have studied angles in triangles, angles on a straight line, angles in a quadrilateral, Equilateral and isosceles triangles.
- Be able to interpret graphs and understand what they tell us. They should be able to use co-ordinates with 2 positive variables.
- Understand the concept of probability and be capable of calculating this, in simple cases. They should be familiar with the words "Certain, likely, unlikely, impossible".
- Be familiar with calculations of averages.
- Have developed abilities to visualise diagrams.
- Be able to interpret bar charts, pictograms and pie charts.
- Substitution into formulae.
- Solution of simple equations.
- Speed/Time graphs.
- Finding percentages of a number and fractions of a number.
- Finding one number as a percentage of another.
- Estimation.
- Simple constructions using protractors and compasses.
- Congruent shapes.
- Nets of solids.

The 13+ mathematical examination is 1 ½ hrs long and is not multiple choice. Pupils are required to read the questions and answer by applying their knowledge and showing workings out. Calculators are not allowed.

If you have any questions about the syllabus, please contact Mrs Debbie Sainsbury, the Registrar, Kent College Pembury, Tunbridge Wells, Kent TN2 4AX.

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