Mathematics
Autumn Term
Year 8

In this booklet you will find information about what your child will be covering in Maths in the Autumn Term. To reach the expected standard by the end of the year pupils should be able to understand and apply these skills. The back page has information on how you can help your child to achieve these expectations.

Autumn Term First Half

Block 1—Ratio and Scale

Step 1: Understand the meaning and representation of ratio.

Step 2: Understand and use ratio notation.

Step 3: Solve problems involving ratio of the form 1:n (or n:1).

Step 4: Solve proportional problems involving the ratio m:n.

Step 5: Divide a value into a given ratio.

Step 6: Express ratios in their simplest ratio form.

Step 7: Express ratios in the form 1:n (H)

Step 8: Compare ratios and related fractions.

Step 9: Understand pi as the ratio between diameter and circumference.

Step 10: Understand gradient of a line as a ratio (H).

Block 2—Multiplicative Change

Step 1: Solve problems involving direct proportion.

Step 2: Explore conversion graphs.

Step 3: Convert between currencies.

Step 4: Explore direct proportion graphs (H)

Step 5: Explore relationships between similar shapes.

Step 6: Understand scale factors as multiplicative representations.

Step 7: Draw and interpret scale diagrams.

Step 8: Interpret maps using scale factors and ratio.

Block 3 —Multiplying and Dividing Fractions

Step 1: Represent multiplication of fractions.

Step 2: Multiply a fraction by an integer.

Step 3: Find the product of a pair of unit fractions.

Step 4: Find the product of a pair of any fractions.

Step 5: Divide an integer by a fraction.

Step 6: Divide a fraction by a unit fraction.

Step 7: Understand and use the reciprocal.

Step 8: Divide any pair of fractions.

Step 9: Multiply and divide improper fractions and mixed numbers.

Step 10: Multiply and divide algebraic fractions.

Autumn Term Second Half

Block 4 —Working in the Cartesian Plane

Step 1: Work with coordinates in all four quadrants.

Step 2: Identify and draw lines that are parallel to the axes.

Step 3: Recognise and use the line y=x.

Step 4: Recognise and use lines of the form y=kx.

Step 5: Link y-kx to direct proportion problems.

Step 6: Explore the gradient of the line y=kx (H)

Step 7: Recognise and use lines of the form y = x + a.

Step 8: Explore graphs with negative gradient.

Step 9: Link graphs to linear sequences.

Step 10: Plot graphs of the form y=mx + c.

Step 11: Explore non-linear graphs (H)

Step 12: Find the midpoint of a line segment.

Block 5—Representing data

Step 1: Draw and interpret scatter graphs.

Step 2: Understand and describe linear correlation.

Step 3: Draw and use line of best fit.

Step 4: Identify non-linear relationships.

Step 5: Identify different types of data.

Step 6: Read and interpret ungrouped frequency tables.

Step 7: Read and interpret grouped frequency tables.

Step 8: Represent grouped discrete data.

Step 9: Represent continuous data grouped in equal classes.

Step 10: Construct and interpret two-way tables.

Block 6 —Probability

Step 1: Construct sample spaces for one or more events.

Step 2: Find probabilities from a sample space.

Step 3: Find probabilities from two-way tables.

Step 4: Find probabilities from Venn diagrams.

Step 5: Use the product rule for finding the total number of outcomes.

H– Denotes higher level

How can you help your child?

Mymaths— This is a maths based website. Each pupil has their own login and password for this website. The website contains a wealth of resources and games for pupils to practise and consolidate learning from the classroom. This website is also often used as a homework resource.

Homework—Pupils will receive one piece of Maths homework each week. This homework will be given out on a Friday and will be due in the following Friday. All details should be written in your child's homework diary. Homework will either be paper based homework, set in google classroom or on Mymaths. Your support with this is invaluable.

Calculations - There is a big emphasis in the new curriculum on using formal methods for calculating. Solid foundations of the four calculation methods (addition, subtraction, multiplication and division) will help your child greatly when applying these skills to word problems and problem solving. For more information on how we teach these methods please see our calculation policy on the school website.

Get your child involved — As adults, we use maths in our day-to-day lives without really thinking about it. Sometimes it doesn't even seem like maths to us, because we've become so used to it. Get your child involved in activities like shopping, cooking, working out holiday budgets; anywhere you realise you use maths, get your child involved!

Thank you for all your support, please don't hesitate to get in touch if you have any questions or queries.