

Subject: Mathematics (Foundation)

Department Staff

Mr E DeSouza, Mr E Gakpo, Mr A Hosseinian, Mr P Kelly,
Mr S McCann, Ms D Thompson, Mr K Pillay, Mr A Sztranyovsky

Year 11 - Autumn Term 2009

Contents: what you will study

Number:

- Calculating Fractions
- Interchanging between percentages fractions and decimals
- Finding percentage change VAT, a percentage profit or loss
- Finding the added cost of buying goods on credit terms
- Using simple interest and compound interest
- Understanding the multiplicative nature of percentages as operators
- Understanding the concept and use of a reciprocal
- Finding 100% when another amount is known
- Solving percentage problems
- Inverse operations
- Reverse rate problems

Algebra:

- Solve simple and complex linear equations
- Solving equations using brackets and negative solutions
- Set up simple equations
- Using algebraic equations to solve problems
- Solving simple inequalities and inequalities with two variables
- Using the difference of two squares
- Simplify expressions by cancelling common factors
- Solving simultaneous equations using elimination and graphical methods

Data Handling:

- Designing questions to collect data
- Collecting data by sampling, observation, experiment, from a database, tables and lists
- Sorting and presenting data
- Designing and using two-way tables
- Dealing with practical problems when collecting data

National Curriculum levels at which you will work

The Foundation tier exam enables pupils to achieve a grade G up to a C grade

Assessment: how you will be tested this term

In addition to classwork and homework assignments (2 per week), you will have an end of half term test on all the topics taught this term. You will also do a Mock GCSE paper in December 2009 using a full past paper – a calculator paper and a non-calculator paper.

NOTE - The Maths GCSE no longer requires coursework

Equipment you will need for this term's work:

Pen, pencil, ruler, compass, protractor, exercise book and calculator.

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Year 11 - Spring Term 2010

Contents: what you will study

Data Handling:

- Finding the mode, median, mean and range from simple data
- Selecting the most appropriate average
- Finding the mode from a discrete frequency table
- Calculating the total frequency from a discrete frequency table
- Calculate the mean from a discrete frequency table
- Mean and median for continuous data
- Modal class for continuous data
- Calculating a moving average
- Plotting and interpreting scatter diagrams
- Describing correlation from a scatter graph
- Drawing and using a line of best fit
- Grouping data in tally tables and grouped frequency tables
- Interpreting frequency diagrams
- Line graphs for discrete and continuous data, including time series
- Constructing and interpreting stem and leaf diagrams
- Box plots
- Calculating the angles to draw a pie chart
- Drawing Pie Charts
- Calculating using pie charts
- Completing cumulative frequency tables
- Plotting cumulative frequency diagrams
- Using cumulative frequency to find the median
- Using cumulative frequency to find quartiles and interquartile range
- Identifying trends in time series
- Comparing shapes of distributions
- Comparing distributions using measures of range and spread
- Using a calculator for statistical calculations

National Curriculum levels at which you will work

The Foundation tier exam enables pupils to achieve a grade G up to a C grade

Assessment: how you will be tested this term

In addition to classwork and homework assignments (2 per week), you will have an end of half term test and an end of term test on all the topics taught this term. You will also do a second Mock GCSE paper.

Equipment you will need for this term's work:

Pen, pencil, ruler, compass, protractor, exercise book and calculator.

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Year 11 - Summer Term 2010

Contents: what you will study

Algebra:

- Plotting graphs of functions where y is expressed in terms of x , leading to a straight line
- Find gradients of straight lines, and exploring gradients of parallel lines
- Recognising the y -intercept of a straight line
- Exploring graphs of the form $y = mx + c$
- Plotting linear graphs from real-life problems
- Interpret graphs representing real-life situations
- Finding approximate solutions to quadratics using graphs
- Extending diagrammatic and number sequences
- Generating number sequences using term-to-term and position-to-term definitions
- Finding the n th term (linear expressions)

Number:

- Basic ideas of ratio
- Simplifying ratios
- Relating ratio form to fractions
- Dividing in a given ratio including using the unitary method
- Converting between units given conversion factors
- Knowing and using metric equivalents of common imperial units
- Calculate speed and other compound measures
- Using index notation
- Recalling integer cubes, squares and corresponding square roots
- Using indices in expressions
- Using index laws for multiplication and division (integer powers)
- Simplifying expressions using the rules of indices
- Using surds and π in exact calculations without a calculator

Shape and space:

- Constructing triangles
- Constructing a perpendicular bisector and finding the mid-point of a line segment
- Bisecting an angle
- Finding Loci
- Constructing graphs of simple loci
- Converting between units of area or volume
- Understanding the dimensions of formulae for perimeter, area and volume
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Data Handling:

- Listing systematically outcomes for single events or two successive events
- Writing probability as numbers
- Equally likely and mutually exclusive events
- The probability of an event not happening
- Using the sum of probabilities equalling 1
- Predicting outcomes using simple probabilities
- Estimating probability by experimenting
- Sample spaces and theoretical probabilities
- Design and use two-way tables
- Estimating probability from theoretical models
- Using relative frequency
- Using the vocabulary of probability to interpret results
- Using probability estimates to compare results
- Understanding the effect of sample size on probability estimates
- Calculating with mutually exclusive events
- Recognising independent events

Use tree diagrams to represent outcomes of compound events

National Curriculum levels at which you will work

The Foundation tier exam enables pupils to achieve a grade G up to a C grade

Assessment: how you will be tested this term

In addition to classwork and homework assignments, you will have the GCSE Maths exam in June 2010. You will also do a Functional Maths exam which you must pass in order to achieve a pass grade in the

Equipment you will need for this term's work:

Pen, pencil, ruler, compass, protractor, exercise book and calculator.