Dawood Public School
Course Outline 2017-18
Mathematics
Class VIII

Books:
Seng, T.et al, 2008, New Syllabus Mathematics 1 (6th Edition), Singapore; Oxford University Press
Seng, T.et al, 2008, New Syllabus Mathematics 2 (6th Edition), Singapore; Oxford University Press
Seng, T.et al, 2008, New Syllabus Mathematics 3 (6th Edition), Singapore; Oxford University Press

Introduction:

This syllabus provides a comprehensive set of progressive learning objectives for mathematics. The objectives detail what the learner should know or what they should be able to do in each year of education. The learning objectives provide a structure for teaching and learning and a reference against which learners' ability and understanding can be checked.
This syllabus designed to promote continuity, coherence and progression within the study of Mathematics. The syllabus builds on the knowledge, understanding and skills developed within the Key Stage of Study for Mathematics.
This syllabus has been designed to meet the requirements of the GCSE regulations.
In studying a course based on this specification, students should be encouraged to make appropriate use of Information and Communications Technology (ICT), for example, spreadsheets and databases.
It has been designed to be as free as possible from ethnic, gender, religious, political or other forms of bias.

Syllabus Aims and Assessment:

The syllabus demands understanding of basic mathematical concepts and their applications, together with an ability to show this by clear expression and careful reasoning.
In the examination, importance will be attached to skills in algebraic manipulation and to numerical accuracy in calculations.

Aims

The course should enable students to:

Applying and Problem-Solving
Using Techniques and Skills in Solving Mathematical Problems

- Use the laws of arithmetic and inverse operations to simplify calculations with whole numbers and decimals.
- Understand everyday systems of measurement and use them to estimate measure and calculate.
- Recognise and use spatial relationships in two and three dimensions.
- Estimate, approximate and check their working.
- Solve word problems involving whole numbers, percentages, decimals, money or measures: choose operations and mental or written methods appropriate to the numbers and context, including problems with more than one step.

Using Understanding and Strategies in Solving Problems

- Identify and represent information or unknown numbers in problems, making correct use of numbers, symbols, words, diagrams, tables and graphs.
- Recognise mathematical properties, patterns and relationships, generalizing in simple cases.
- Record and explain methods, results and conclusions.
- Discuss and communicate findings effectively, orally and in writing.

Communicating and Expressing

- listen to and discuss other children's mathematical descriptions and explanations
- discuss and record the processes and results of work using a variety of methods
- discuss problems and carry out analyses

Integrating and Connecting

- understand the connections between mathematical procedures and the concepts she uses
- recognize and apply mathematical ideas and processes in other areas of the curriculum

Reasoning

- search for and investigate mathematical patterns and relationships
- reason systematically in a mathematical context
- justify processes and results of mathematical activities, problems and projects

Implementing

- devise and use mental strategies and procedures for carrying out mathematical tasks
- use appropriate manipulative to carry out mathematical procedures

Understanding and Recalling

- understand and recall facts, definitions and formulae.

Assessment

Assessment: An Integral Part of Teaching and Learning

Assessment is a continuous, dynamic and often informal process. It is a continuum, ranging from classroom observation to standardized tests. Equally important are questioning and dialogue, homework, and structured tests developed by teachers. Assessment provides information that can be used in decision-making about how the teacher can realistically answer the needs of the child. It must be an integral part of the educational process and should not become an end in itself. A balance must be struck between time spent on assessment and the time spent on teaching and learning.

ASSESSMENT OBJECTIVES

Within the assessment components, candidates will be required to:

- recall, apply and interpret mathematical knowledge in the context of everyday situations;
- set out mathematical work, including the solution of problems, in a logical and clear form using appropriate symbols and terminology;
- organise, interpret and present information accurately in written, tabular, graphical and diagrammatic forms;
- perform calculations by suitable methods;
- use an electronic calculator;
- understand systems of measurement in everyday use and make use of them in the solution of problems;
- estimate, approximate and work to degrees of accuracy appropriate to the context;
- use mathematical and other instruments to measure and to draw to an acceptable degree of accuracy;
- recognise patterns and structures in a variety of situations and form generalisations;
- interpret, transform and make appropriate use of mathematical statements expressed in

Words or Symbols:

- recognise and use spatial relationships in two and three dimensions, particularly in solving problems;
- analyse a problem, select a suitable strategy and apply an appropriate technique to obtain its solution;
- apply combinations of mathematical skills and techniques in problem solving;
- make logical deductions from given mathematical data;
- respond to a problem relating to a relatively unstructured situation by translating it into an appropriately structured form.

Units:

- SI units will be used in questions involving mass and measures: the use of the centimetre will continue.

Monthly Syllabus for the Year 2017 – 18

MONTH	TOPIC	RESOURCE	DURATION
AUGUST	➢ Congruence and Similarity ➢ Volume and Surface Area ➢ Math activity Calendar	Book – 2 Book – 2	2 Weeks 2 Weeks
SEPTEMBER	➢ Probability ➢ Algebraic Manipulation and Formulae ➢ Math activity Calendar	Book – 2 Book – 2 Book – 1	1 Week 3 Weeks
OCTOBER	➢ Number Sequences ➢ Statistics ➢ Linear Inequalities ➢ Math activity Calendar	Book – 1 Book – 1 Book – 3	1 Week 1 Week 2 Weeks
NOVEMBER	Revision For Mid Term		
DECEMBER	Mid Term Examination		
JANUARY	➢ Application of Mathematics in Practical Situation ➢ Congruent and Similar Triangles ➢ Math activity Calendar	Book – 3 Book - 3	2 Weeks 2 weeks
FEBRUARY	➢ Graphs of Quadratic Equations ➢ Indices ➢ Math activity Calendar	Book – 2 Book – 3	2 Weeks 2 Weeks
MARCH	➢ Indices (Cont) ➢ Statistics ➢ Direct and Inverse Proportions ➢ Math activity Calendar	Book – 3 Book – 2 Book – 2	1 Week 1.5 Weeks 1.5 Weeks
APRIL	Revision For Final Term		
MAY	Final Term Examination		

AUGUST

- **Volume and Surface Area**
  Book – 2, Chapter No. 3
  Pg No (197 – 231)

- **Congruence and Similarity**
  Book – 2, Chapter No.1
  Pg No (3-28)

MONTH	TOPIC	OBJECTIVES	LEARNING RESOURCES
AUGUST	• Congruence and Similarity Book 2, Chap No.1 Pg No.(3-28) • Volume and surface area Book 2, Chap No 7 Pg No.(197-231)	**Students should be able to:** • Calculate the actual length and the actual area from a given scale model and vice versa. • Express the scale of a map as a representative fraction and vice versa and use it to calculate the distance between two places. • Calculate the actual dimensions of a place on a map and vice versa. • Calculate the actual area of places such as parks, villages, etc., on a map and vice versa. • Solve map problems involving distance and area of a place. • Differentiate b/w congruent and similar figure; • Solve problems and give simple explanations involving similarity and congruence; **Students should be able to:** • State the formula for the volume of a pyramid and use it to solve related problems. • Sketch a pyramid and draw its net and use it to find the surface area of a pyramid. • State the formulae for the volume curved surface area and the total surface area of a cone and use these formulae to solve related problems. • State the formulae for the volume and surface area of a sphere and use them to solve related problems. • Solve problems involving cones, prisms, pyramids, cylinders and/or spheres.	Resource for congruence: www.regentsprep.org/Regents/math/geometry/GP4/indexGP4.html Resource for similarity: www.regentsprep.org/Regents/math/geometry/GP11/indexGP11.html Spheres, pyramids and cones www.bbc.co.uk/schools/gcsebitesize/maths/geometry/ Challenging task that involves finding volumes of a set of containers: http://donsteward.blogspot.co.uk/2012/04/tubs.html

ATTAINABLE TARGETS:

Congruence and Similarity:

- Identify congruent figures and objects and use the correct notations to express congruency.
- Find unknown values in a pair of congruent figures.
- Identify similar figures and objects and use the correct notations to express similarity.
- State the properties of a pair of similar figures and use these properties to find the unknowns in a pair of similar figures.
- Use similarity properties to make scale drawings of simple objects or places such as a field, a school hall, etc.

Words to Remember:

Congruent, Congruency, Similar, Similarity, Corresponding angles, Corresponding sides, Scale, Linear scale, Scale factor, Dimension, Actual measurement.

Volume and Surface Area:

- Student must know the practical application of volume and surface area.
- Student must able to difference between figures.
- Must memorize formulae and implement it on correct place

Words to Remember:

Pyramids, Polygonal base, Cones, Simple closed curve, Right circular cone, perpendicular height, Slant height, Sphere, Hemisphere.

SEPTEMBER

- **Probability**
  Book – 2, Chap No.12
  Pg No (353 – 372)

- **Algebraic Manipulation & Formulae**
  Book – 2, Chapter No. 4
  Pg No (117-149)

MONTH	TOPIC	OBJECTIVES	LEARNING RESOURCES
SEPTEMBER	• Probability Book 2, Chap No.12 Pg No.(353-372) • Algebraic Manipulation and Formula Book 2, Chap No.4 Pg No.(117-149)	**Students should be able to:** • Define experiments and sample space. • Define the classical definition of probability of an event E occurring as P(E)= No.of Favorable Outcomes • No.of Possible Outcomes • Use the above results to calculate the probability of occurrence of simple events • Define the experimental probability of the event E happening • Use the above results to calculate the probability of occurrence of simple events. • State that for any event E, $0 \leq P(E) \leq 1$. P(E)=0 if and only if the event E cannot possibly occur. P(E)=1 if and only if the event E will certainly occur. **Students should be able to:** • Simplify simple algebraic fractions • Involving single terms using the rules shown above. • Simplify algebraic fractions with polynomials by using factorisation and using the rules learnt above. • Perform multiplication and division of simple algebraic fractions. • Find the HCF and LCM of algebraic expressions. • Perform addition and subtraction of simple algebraic expressions. • Solve simple equations involving algebraic fractions. • Express problems that involve algebraic fractions in the form of equations and solve them. • Change the subject of a simple formula. • Changing the subject of a formula involving squares, square roots, cubes and cube roots etc. • Manipulate directed numbers; • Use brackets and extract common factors; • Expand products of algebraic expressions • Manipulate simple algebraic fractions.	An introductory lesson on probability with a quiz to check understanding: www.mathgoodies.com/lessons/vol6/intro_probability.html A game involving simple probabilities: www.bbc.co.uk/schools/mathsfile/shockwave/games/fish.html Interactive dice and spinners: http://nrich.maths.org/6717 Work on formulae: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bka2.pdf Work on directed numbers, simplifying and simple equations: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb10.pdf Online worksheets, and practice sums for better understanding www.algebrahelp.com/worksheets/index.html

ATTAINABLE TARGETS:

Algebraic Manipulation and Formulae:

- Student must know the algebraic method for solving a problem consists of the following steps:
- Let the unknown be denoted by a variable.
- Form an equation involving the variable.
- Solve the equation.
- Check the solution.

Words to Remember:

Algebraic fractions, Key words of mathematical operations, Subject of formula.

Probability:

- Student must know a sample space or probability space is the collection of all possible outcomes of a probability experiment.
- Student must know an event E contains the outcomes from the sample space that favor the occurrence of the event.
- Calculate the probability of a single event as either a fraction, decimal or percentage.
- Understand and use the probability scale from 0 to 1.

Words to Remember:

Chance, Event, Sample space, Equal chance, Favorable Outcomes, Possible outcomes

OCTOBER

- **Number Sequences**
  Book – 1, Chap No. 6
  Pg No (115 – 133)
- **Statistics**
  Book – 1, Chap No.13
  Pg No (291 – 324)
- **Linear Inequalities**
  Book – 3, Chapter No. 3
  Pg No (53 – 70)

MONTH	TOPIC	OBJECTIVES	LEARNING RESOURCES
OCTOBER	• Number Sequences Book – 1, Chap No. 6 Pg No (115 – 133) • Statistics Book – 1, Chap No.13 Pg No (291 – 324) • Linear Inequalities Book – 3, Chapter No. 3 Pg No (53 – 70)	**Students should be able to:** • Recognize simple number patterns and continue a given number sequence. • State the rules of a number pattern in terms of the general term. • Solve non-routine problems using problem-solving strategies such as drawing a diagram, using trial and error, etc. **Students should be able to:** • Collect, classify and tabulate statistical data; read, interpret and draw simple inferences from tables and statistical diagrams; • Construct and use bar charts, pie charts and pictograms. • Collect, classify and tabulate continuous data into classes of equal intervals. • Construct and use bar graphs. **Students should be able to:** • Solve simple linear equations in one unknown; • Solve simple linear inequalities. • Represent inequalities on a number line. • Use the addition property of inequality to isolate variables and solve algebraic inequalities. • Use the multiplication property of inequality to isolate variables and solve algebraic inequalities • Form and solve liner inequalities from given word problems. • Use interval notation correctly. • Solve applications involving linear equations and inequalities.	A chapter about number patterns: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb12.pdf A fascinating site about the Fibonacci sequence and the Golden section: www.mcs.surrey.ac.uk/Personal/R.Knott/Fibonacci/fib.html BBC Bitesize has work on charts, diagrams and statistical calculations: www.bbc.co.uk/schools/gcsebitesize/maths/statistics/ Work on statistics at: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb8.pdf Maths Is Fun has work on simple histograms: www.mathsisfun.com/data/histograms.html Work on formulae: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bka2.pdf Work on directed numbers, simplifying and simple equations: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb10.pdf. Work on inequalities: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkc16.pdf

ATTAINABLE TARGETS:

Number Sequences:

Students must know

- Numbers are written in a sequence through a rule.
- An increasing sequence is generated by addition or multiplication, whereas a decreasing sequence is generated by division and subtraction.
- Continue a given number sequence and find its general term.
- Some sequence follow dual or triangular pattern so complete sequence should be consider to predict the unknown term.

Words to Remember:

Next term, Consecutive, Sequence, Series, Continue, Predict, Pattern, General term, n^{th} term.

Statistics:

- Systematically collect, organize, and describe data
- Construct, read, and interpret tables charts, and graphs
- Make inferences and convincing arguments that are based on data analysis
- Develop an appreciation for statistical methods as powerful means for decision making
- The Pie Chart
- The Bar Graph
- The Statistical Map
- The Histogram
- Statistics in Practice
- The Frequency Polygon
- Times Series Charts
- Distortion in Graphs

Words to Remember:

Pictogram, Bar graph, Pie chart, Angle sector, Tally marks, Class intervals, Line graph, Histogram, Grouped data, Frequency table.

Linear Inequalities:

- Student must know for any three numbers x,y and z, if x>y and y >z, then x>z.
- For any three numbers x,y and z,
- If x>y, then x+z> y+z
- If x>y,then xz<yz when z<0
- If x>y,then xz>yz when z>0

Words to Remember:

Equality, Inequality, Greater than, Smaller than, Greater than and equal to, Smaller than and equal to, Equal to, Not equal to, Circle dot, Circle, Transitive property, Law of Trichotomy.

NOVEMBER

REVISION FOR MID TERM EXAMS

DECEMBER

MID TERM EXAMS

JANUARY

- **Application of Mathematics in Practical Situation**
  Book – 3, Chap No. 6
  Pg No (127 – 167)
- **Congruent and Similar triangles**
  Book – 3, Chapter No. 8
  Pg No (201 – 222)

MONTH	TOPIC	OBJECTIVES	LEARNING RESOURCES
JANUARY	• Application of Mathematics in Practical Situation Book – 3, Chap No. 6 Pg No (127 – 167) • Congruent and Similar triangles Book – 3, Chapter No. 8 Pg No (201 – 222)	**Students should be able to:** •Solve problems involving profit and loss. • Solve problems involving further examples of percentages. • Solve problems involving simple interest. • Solve problems involving compound interest. • Solve problems involving hire purchase. • Convert one currency to another. • Calculate simple taxation problems. • Solve problems involving personal and household finances. • Interpret and use tables and charts in solving problems. • Use different problem solving strategies to solve everyday life problems. • Use conversions between currencies, usingconversion graphs as well as conversion rates. **Students should be able to:** • Identify given triangles as similar, congruent or neither. • Identify corresponding parts of congruent figures. • Identify corresponding parts of similar figures. • Find unknown measures of corresponding parts of similar figures. • Use similar figures to measure indirectly. • Determine when triangles are similar using SSS Similarity, AAS, SAS Similarity, and congruency and to recognize the uses of similar triangles in determining unknown distances.	A variety of activities based on money and finance: www.bbc.co.uk/bitesize/standard/maths_i/numbers/ Activity: Price of coffee http://reflectivemaths.wordpress.com/2014/06/02/price-of-coffee/ Activity: Percentages www.bbc.co.uk/schools/gcsebitesize/maths/number/ Congruence and Similarity http://staff.argyll.epsb.ca/jreed/math9/strand3/3202.html Congruent Triangles: https://www.mathsisfun.com/geometry/triangles-congruent.html Similar Triangles: https://brilliant.org/wiki/congruent-and-similar-triangles/

ATTAINABLE TARGETS:

Application of Mathematics in Practical Situation:

- Student must know Profit = Selling price – Cost price & Loss =Cost price – Selling price.
- Student must know the simple interest on $ P for T years at R% per annum in $ I, then I = PRT/100.
- Student must know Chargeable income = Total income – Relief.

Words to Remember:
Cost price, Sale price, Profit, Loss, Price, Percentage profit, Percentage loss, Discount, Marked price, Interest, Rate, Per Annum, Principal, Amount, Time.

Congruent and Similar Triangles:

Students must know

- Congruent
  Having the same size and shape and measurement.
- Similar
  Having the same shape, but not the same size. Similar shapes are proportional to each other.
- Corresponding
  Matching-corresponding sides between two triangles are sides that match up.
- Ratio
  A way of comparing two quantities
- Proportion
  A pair of equal ratios.
- Indirect Measurement
  Using the characteristics of similar triangles to measure challenging things or distances.

Words to Remember:
Congruent, Congruency, Similar, Similarity, Corresponding angles, Corresponding sides, Scale, Linear scale, Scale factor, Dimension, Actual measurement.

FEBRUARY

- **Graphs of Quadratic Equations**
  Book – 2, Chap No. 9
  Pg No (261 – 274)
- **Indices and Standard Form**
  Book – 3, Chapter No. 2
  Pg No (21 – 51)

MONTH	TOPIC	OBJECTIVES	LEARNING RESOURCES
FEBRUARY	• Graphs of Quadratic Equations Book – 2, Chap No. 9 Pg No (261 – 274) • Indices and Standard Form Book – 3, Chapter No. 2 Pg No (21 – 51)	**Students should be able to:** • Demonstrate familiarity with Cartesian coordinates in two dimensions; • Interpret and use graphs in practical situations including travel graphs and conversion graphs; • Draw graphs from given data; • Construct tables of values and draw graphs for functions. • Interpret graphs of linear, quadratic functions • Locate the position of a coordinate point on a graph and find the length of a line segment. • Find the gradient of a line joining two given points. • Find the equation of a straight line given its gradient m and one point on the line. • Find the equation of a straight line joining two given points. • Solve related problems involving equations of straight lines. **Students should be able to:** • Use the Multiplication Law of Indices to simplify terms that involve positive indices. • Use the Division Law of Indices to simplify terms that involve positive indices. • Use the Power Law of Indices to simplify terms that involve positive indices. • Use the various Laws of Indices to simplify terms that involve positive indices. • State the Laws of Indices involving zero and negative indices and use them to evaluate numerical expressions with zero and negative indices. • Use and interpret positive, negative, zero and fractional indices. • Use the standard form $A \times 10^n$ where n is a positive or negative integer, and $1 \leq A < 10$.	Introduction of Quadratic Graphs: www.purplemath.com/modules/grphquad.html Quadratic Graphs https://www.mathsisfun.com/algebra/quadratic-equation-graphing.html Video lesson of graph to solve quadratic equation. https://www.mathplanet.com/education/algebra-1/quadratic-equations/use-graphing-to-solve-quadratic-equations Work on indices (including fractional indices) www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bka1.pdf Online worksheets, including one about negative indices: www.algebrahelp.com/worksheets/index.html Click on images to reveal more information, including measurements in standard form: http://htwins.net/scale2/ About standard form: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bka1.pdf

ATTAINABLE TARGETS:

Quadratic Graphs:

- Student must know the general form of a quadratic graph is $y = ax2 + bx + c$ ($a \neq 0$)
- The quadratic graph of $y = ax2 + bx + c$ ($a \neq 0$) has a minimum point (the lowest point) when a is positive .It has a maximum point (the highest point) when a is negative.
- The line of symmetry of the quadratic graph passes through the maximum or minimum point.

Words to Remember:

Scale, Coordinates, Minimum point (Lowest point), Maximum point (Highest point), Line of Symmetry,

Indices and Standard Form:

Student must know:

- What indices are?
- How to perform calculations with indices?
- How to multiply indices with the same base?
- How to divide indices with the same base?
- How to use indices in algebra?
- Some other rules of indices

Words to Remember:

Index, Indices, Base, Power, Exponent, Real numbers, Integers, Standard form, Scientific notation, Ordinary form.

MARCH

- **Statistics**
  Book – 2, Chap No. 11
  Pg No (311 – 344)

- **Direct and Inverse Proportions**
  Book – 2, Chapter No. 2
  Pg No (35 – 69)

MONTH	TOPIC	OBJECTIVES	LEARNING RESOURCES
MARCH	• Statistics Book – 2, Chap No. 11 Pg No (311 – 344) • Direct and Inverse Proportions Book – 2, Chapter No. 2 Pg No (35 – 69)	**Students should be able to:** • Collect and organize data logically and present it in the form of a table. Illustrate a given set of information by drawing a pie chart and a bar chart (Revision). • Illustrate a given set of information by drawing: (i) Dot diagram (ii) Stem & leaf diagram and to interpret these graphs. (iii) Define the mode and find its value for a set of data. • Calculate themean, median and mode for individualdata and distinguish between thepurposes for which they are used. • Find the mean, median and mode from a discrete frequency distribution. • Calculate themean for a grouped frequency distribution; identifythe modal class from a grouped frequency distribution. **Students should be able to:** • Understand the concept of variation. • Understand direct proportion. • Solve the problems under direct variation. • Express direct and inverse variation in algebraic terms and use this form of expression to find unknown quantities. • Write down an equation connecting two quantities which are directly proportional to each other and use the rule to solve problems involving direct proportion. • Evaluate problems under inverse proportion.	Work on tables and charts at: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb8.pdf Mean, median and mode are dealt with at: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb9.pdf Work on statistics at: www.cimt.plymouth.ac.uk/projects/mepres/allgcse/bkb8.pdf Maths Is Fun has work on simple histograms: www.mathsisfun.com/data/histograms.html Interactive learning http://www.mathsisfun.com/algebra/directly-inversely-proportional.html Examples and material on proportion http://donsteward.blogspot.co.uk/search/label/proportion

Statistics:

Students must know

- Systematically collect, organize, and describe data.
- Construct, read, and interpret table's charts, and graphs and diagrams.
- Make inferences and convincing arguments that are based on data analysis.
- Develop an appreciation for statistical methods as powerful means for decision making.

Words to Remember:
Pictogram, Pie chart, Histogram, Dot diagram, Interprets, Grouped data, Grouped frequency table, Mode, Mean, Median, Average, Class intervals.

Direct and Inverse Proportion:

- Student must know a proportion is a statement expressing the equivalence of two rates or two ratios.
- Student must know y is directly proportional to x, then $y/x = k$ or $y = kx$, where k is a constant and $k \neq 0$
- Student must know that the graph of y against x is a straight line that passes through the origin.
- y is inversely proportional to x, then $xy=k$ or $y= k/x$, where k is a constant and $k\neq0$.

Words to Remember:
Ratio, Proportional, Direct proportional, Inverse proportional, Proportional parts.

APRIL
REVISION FOR FINAL EXAMS

MAY
FINAL EXAMS

Assessment and Home Work
Students will be assessed by taking test of each and every chapter. Home Work shall be given on a daily basis.

Mathematical Notations:
The list which follows summarizes the notation used

Mathematical Symbols
= is equal to
≠ is not equal to
≡ is identical to or is congruent to
≈ is approximately equal to

Operations
a + b a plus b
a – b a minus b
a× b, ab, a.b a multiplied by b
a ÷ b, a , a/b
b
adivided by b

Resource List

Books:

- Sang, T.et al, 2008, New Syllabus Mathematics Work book 1, 2 & 3 (6th Edition), Singapore; Oxford University Press
- Bostock, L, S Chandler, A Shepherd, E Smith ST(P) Mathematics Books 1A to 5A

(Stanley Thornes)		
Book 1A	Book 2A	Book 3A
Book 1B	Book 2B	Book 3B