

**Dawood Public School**  
**Course Outline 2017-18**  
**Mathematics**  
**Class VII**

**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

**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**

<b>MONTH</b>	<b>TOPIC</b>	<b>RESOURCE</b>	<b>DURATION</b>
<b>AUGUST</b>	➤ Estimation and Approximation.	<b>Book 1</b>	<b>1 week</b>
	➤ Algebraic equations and simple inequalities.(7d – 7j)	<b>Book 1</b>	<b>2 weeks</b>
	➤ Ratio, Rate and Speed.	<b>Book 1</b>	<b>1 week</b>
	➤ Calendar Activity		
<b>SEPTEMBER</b>	➤ Ration, Rate and Speed (cont.)	<b>Book 1</b>	<b>1 week</b>
	➤ Simultaneous linear equations.	<b>Book 2</b>	<b>2 weeks</b>
	➤ Rational numbers.	<b>Book 1</b>	<b>1 week</b>
	➤ Calendar activity		
<b>OCTOBER</b>	➤ Graph of Linear Equation of Two Unknowns.	<b>Book 2</b>	<b>2 weeks</b>
	➤ Area and perimeter(rev)	<b>Book 1</b>	<b>0.5 weeks</b>
	➤ Volume and Surface Area	<b>Book 1</b>	<b>1.5 weeks</b>
	➤ Calendar Activity		
<b>NOVEMBER</b>	<b>Revision For Mid Term</b>		
<b>DECEMBER</b>	<b>MID TERM EXAMINATIONS</b>		
<b>JANUARY</b>	➤ Symmetry	<b>Book 1</b>	<b>2 weeks</b>
	➤ Number sequence	<b>Book 1</b>	<b>0.5 weeks</b>
	➤ Percentages	<b>Book 1</b>	<b>1.5 weeks</b>
	➤ Calendar Activity		
<b>FEBRUARY</b>	➤ Percentages	<b>Book 1</b>	
	➤ Expansion and Factorisation of Algebraic Expressions.	<b>Book 2</b>	
	➤ Basic geometrical concepts.(rev)	<b>Book 1</b>	
	➤ Calendar Activity		
<b>MARCH</b>	➤ Angle Properties of Polygons	<b>Book 1</b>	<b>2 weeks</b>
	➤ Pythagoras' Theorem	<b>Book 2</b>	<b>2 weeks</b>
	➤ Calendar Activity		
<b>APRIL</b>	<b>Revision for Final Term</b>		
<b>MAY</b>	<b>FINAL EXAMINATION</b>		

**AUGUST**

**CHAPTER # 4 (BOOK 1):**  
**Estimation and approximation**  
 Page Number: 71 – 88

**CHAPTER # 7 (Book 1):**  
**Algebraic Equations & Simple Inequalities**  
 Page Numbers: 139-166

**CHAPTER # 10 (Book 1):**  
**Ratio, Rate and Speed**  
 Page Numbers: 225-246

Month	Theme or Topic	Objective	Resource	Activities
<b>August</b>	<b>Book – 1</b> <b>Chap No 4</b> <ul style="list-style-type: none"> <li>➤ Estimation and Rounding off number to given number of decimal places.</li> <li>➤ Rounding a number to a given number of significant figures.</li> </ul>	By the end of the topic, students would be able to : <ul style="list-style-type: none"> <li>➤ Estimate and round off different values.</li> <li>➤ Round off to specific decimal places.</li> <li>➤ Round off to given significant numbers</li> </ul>	Book -1 Pg #73 – 86 Work book -1 Pg # 26-28  <a href="http://www.math-aids.com/Estimation">www.math-aids.com/Estimation</a>  <a href="http://www.mrnussbaum.com/sixth-grade-learning-games">www.mrnussbaum.com/sixth-grade-learning-games</a>	Preparation of chart after discussion with students about the rules.
	<b>Book – 1</b> <b>Chap No 7</b> <ul style="list-style-type: none"> <li>➤ Algebraic Equations &amp; Simple Inequalities</li> </ul>	Students should be able to: <ul style="list-style-type: none"> <li>➤ Solve simple linear equations in one unknown;</li> <li>➤ Solve fractional equations with numerical and linear algebraic denominators;</li> <li>➤ Construct simple formulae from given word expressions</li> <li>➤ Express word expressions by algebraic methods</li> <li>➤ Solve algebraic word problems using the various problems solving heuristics.</li> <li>➤ Use the symbols =, &lt; or &gt; correctly.</li> <li>➤ State and use the rules of simple inequality in problems.</li> </ul>	<a href="http://www.jumpstart.com">www.jumpstart.com</a>  <a href="http://www.mathfox.com">www.mathfox.com</a>  Book – 1 Pg # 137 – 165  Workbook – 1 Pg # 56 – 60  Links: <ul style="list-style-type: none"> <li>➤ <a href="http://www.mathsisfun.com">www.mathsisfun.com</a>.</li> <li>➤ <a href="http://www.openlysolved.org">www.openlysolved.org</a>.</li> <li>➤ <a href="http://www.khanacademy.org">www.khanacademy.org</a>.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Making chart of key words of arithmetic operators.</li> <li>➤ Group activity of making algebraic equations by using verbal expression.</li> </ul>

Month	Theme or Topic	Objective	Resource	Activities
<b>August</b>	<p><b>Book – 1</b> <b>Chap No 10</b></p> <p>➤ Ratio, Rate and Speed</p> <p>Pg No.225-246</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>➤ Demonstrate an understanding of the elementary ideas and notation of ratio, direct and inverse proportion and common measures of rate;</li> <li>➤ Divide a quantity in a given ratio;</li> <li>➤ Use scales in practical situations,</li> <li>➤ Calculate average speed;</li> <li>➤ Express direct and inverse proportion use this form of expression to find unknown quantities.</li> <li>➤ Calculate times in terms of the 12-hour and 24-hour clock;</li> <li>➤ Read clocks, dials and timetables.</li> <li>➤ Apply the results: <ul style="list-style-type: none"> <li>a. Average speed = Distance travelled/Time taken,</li> <li>b. Distance travelled = Average speed x Time taken,</li> <li>c. Time taken = Distance travelled/Average speed,</li> </ul> </li> <li>➤ Convert speed in km/h to m/s and vice versa.</li> </ul>	<p>Book – 1 Pg #225–246</p> <p>Workbook 1 Pg # 85 – 90</p> <p>Links: <a href="http://www.mathsisfun.com">www.mathsisfun.com</a></p> <p><a href="http://www.everythingmaths.com">www.everythingmaths.com</a></p> <p><a href="http://www.khanacademy.org">www.khanacademy.org</a></p>	

## **ATTAINABLE TARGETS**

### **Estimation and approximation**

- Make an estimate of the value of a given problem involving sum, difference, product, quotient, squares and square roots, cubes and cube roots of numbers.
- Round off a number to the required degree of accuracy.
- State the rules for writing significant figures.
- Round off a number to the required number of significant figures.

### **Algebraic Equations & Simple Inequalities:**

- Simplify and compare two algebraic expressions.
- Write and solve algebraic inequalities.
- Solve for a variable when two expressions are equal.
- Write and solve an equation to solve a word problem.
- Recognize when an equation has no solution or infinite solutions

### **Ratio, Rate and Speed:**

- Know the difference between ratio, rate, and unit rate.
- Calculate unit rates.
- Use proportional reasoning to solve word problems.
- Practice with simple unit price examples

**SEPTEMBER**

**CHAPTER # 5 (Book 2):**  
**Simultaneous Linear Equations**  
 Page Numbers: 153-174

**CHAPTER # 3 (BOOK- 1):**  
**Rational numbers**  
 Page number: 51 – 70

Month	Theme or Topic	Subject Content	Resource	Activities
<b>September</b>	<p><b>Chapter #10</b>  <b>BOOK -1</b>                      Ratio , rate and speed (cont)</p> <p><b>Chapter#5</b>  <b>BOOK -2</b></p> <p>➤ Simultaneous Linear Equations</p> <p>Pg No.153- 174</p> <p><b>Chapter# 3</b>  <b>BOOK – 1</b></p> <p>Rational numbers                      Page no. 51- 70</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>➤ Solve a pair of simultaneous equations by the elimination method.</li> <li>➤ Solve a pair of simultaneous linear equations by adjusting the coefficients of one similar variable of both equations to be equal before elimination</li> <li>➤ Solve a pair of simultaneous linear equations by using the substitution method.</li> <li>➤ solve fractional equations with numerical and linear algebraic denominators</li> <li>➤ solve simultaneous linear equations in two unknowns;</li> </ul> <p>By the end of the topic, students would be able to :</p> <ul style="list-style-type: none"> <li>➤ Arrange rational numbers in ascending and descending order.</li> <li>➤ Add and subtract rational numbers with brackets.</li> <li>➤ Multiply and divide rational numbers.</li> <li>➤ Solve problem sums related to rational numbers.</li> <li>➤ Differentiate and recognize rational, irrational numbers and work out recurring or non-recurring decimals.</li> </ul>	<p><b>Book -2</b>                      Pg # 153 – 174</p> <p><b>Workbook – 2</b>                      Pg # 51 – 57</p> <p>Links:  <a href="http://www.khanacademy.org">www.khanacademy.org</a>  <a href="http://www.math-onlymath.com">www.math-onlymath.com</a></p> <p>Book -1 pg # (53 -67)</p> <p>Work Book – 1                      Pg no.(20- 22)</p> <p><a href="http://www.softschools.com">www.softschools.com</a></p> <p><a href="https://www.quia.com">https://www.quia.com</a></p> <p><a href="https://www.brainpop.com/games/battleshipnumberline">https://www.brainpop.com/games/battleshipnumberline</a></p> <p><a href="http://www.mathwarehouse.com/numbers/rational-irrationalnumbers/rational-irrational">www.mathwarehouse.com/numbers/rational-irrationalnumbers/rational-irrational</a></p> <p><a href="http://www.mathplayground.com/ASB_SpiderMatchIntegers">www.mathplayground.com/ASB_SpiderMatchIntegers</a></p>	



## **ATTAINABLE TARGETS:**

### **Simultaneous Linear Equations:**

- Solve simultaneous equations involving two variables, by eliminating one of the variables.
- Express one of the variables in terms of the other, and to solve the simultaneous equations using the substitution method.
- Identify simultaneous equations as being solvable only when the number of equations is equal to the number of variables.

### **Rational numbers**

- Identify a rational number.
- Use the four basic operations on numbers and brackets to simplify rational numbers.
- Solve word problems involving rational numbers.
- Represent recurring and terminating decimals.

**OCTOBER**

**CHAPTER # 8 (Book 2):**

Graphs of linear equations in two unknowns

Page Numbers: 237-258

**CHAPTER # 9 (Book 1):**

Volume and Surface Area

Page Numbers:

249-266

**CHAPTER # 8 (BOOK- 1)**

Perimeter and Area of simple Geometrical Figures.

Page number: 167 – 189

Month	Theme or Topic	Subject content	Resource	Activities
<b>October</b>	<p><b>Chap No. 8 BOOK- 2</b></p> <p>Graphs of linear equations in two unknowns</p> <p>Pg No. 237 - 258</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>➤ Select appropriate scales for drawing graphs.</li> <li>➤ Construct a table of values for x and y for a given linear equation.</li> <li>➤ Plot the points given/found on a Cartesian plane.</li> <li>➤ Identify <math>y = c</math> as the equation of a straight line graph drawn</li> <li>➤ Passing through a point (h, c) where h is any constant, and parallel to x-axis.</li> <li>➤ Identify <math>x = a</math> as the equation of a straight line graph drawn passing through a point (a, k) where k is any constant and parallel to y-axis.</li> <li>➤ Calculate the gradient of a straight line from the coordinates of two points on it;</li> <li>➤ Interpret and obtain the equation of a straight line graph in the form <math>y = mx + c</math>;</li> <li>➤ Solve simultaneous equations graphically.</li> <li>➤ Collect, classify and tabulate statistical data; read, interpret and draw simple inferences from tables and statistical diagrams;</li> </ul>	<p><b>Book – 2</b> Pg # 237 – 258</p> <p><b>Workbook – 2</b> Pg # 85 – 89</p> <p>Links: <a href="http://www.purplemath.com">www.purplemath.com</a> <a href="http://www.mathsisfun.com">www.mathsisfun.com</a> <a href="http://www.khanacademy.org">www.khanacademy.org</a></p>	<p>Activity of making alien mask on square grid.</p>

Month	Theme or Topic	Subject content	Resource	Activities
<b>October</b>	<p><b>Chap No.9</b> <b>BOOK -1</b></p> <p>Volume and Surface Area</p> <p>Pg No.191-214</p> <p><b>CHAPTER # 8</b> <b>(BOOK- 1)</b></p> <p>Perimeter and Area of simple Geometrical Figures.</p> <p>Pg No.167 – 189</p>	<p>Students should be able to:</p> <ul style="list-style-type: none"> <li>➤ Identify and convert a metric unit of volume into another metric unit such as 1 m<sup>3</sup> = 1 000 litres, 1 litre = 1 000 cm<sup>3</sup>, etc.</li> <li>➤ Draw the net of a cuboid.</li> <li>➤ State and use the formulae for finding the volume and surface area of cuboids.</li> <li>➤ State and use the formulae for finding the volume and total surface area of prisms and draw the nets of prisms.</li> <li>➤ State and use the formulae for finding the volume, curved surface area and total surface area of cylinders and to solve problems involving cylinders.</li> <li>➤ Solve problems involving hollow cylinders, and solids consisting of prisms, cylinders and cuboids and problems involving densities.</li> </ul> <p>By the end of the topic, students would be able to :</p> <ul style="list-style-type: none"> <li>➤ Convert area from one unit to another.</li> <li>➤ Find area of parallelogram using formula.</li> <li>➤ Find area of trapezium using formula.</li> <li>➤ Find area and perimeter of circle, semi-circle using formula.</li> <li>➤ Find area and perimeter of composite and complex figure.</li> </ul>	<p><b>Book – 1</b> Pg # 191 – 214</p> <p><b>Workbook – 1</b> Pg # 75 – 79</p> <p>Links: www.mathworksheet4kids.com www.homeschoolmath.net www.khanacademy.org</p> <p>Book – 1 Pg #167 -189</p> <p>Work book - 1 Pg # 62-66</p> <p>Links: <a href="https://www.tes.com/.../area-of-compound-shapes-trianglesparallelograms">https://www.tes.com/.../area-of-compound-shapes-trianglesparallelograms</a> <a href="http://www.mathgoodies.com/lessons/toc">www.mathgoodies.com/lessons/toc</a></p>	<p>Group activity of making 3D shapes by using boxes and card sheets.</p>

## **ATTAINABLE TARGETS:**

### **Graphs of linear equations in two unknowns**

- Plotting the lines representing two linear equations on the same plane.
- Relation between the coefficients of pair of linear equations.
- Predict about the given system of linear equations.
- Graphical representation of pair of linear equations.
- Algebraic interpretation of Graphical representation of pair of linear equations.
- Nature of system of linear equations.

### **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.

### **Perimeter and Area of simple Geometrical Figure:**

- Convert one unit of metric measure of area to another.
- Calculate the perimeter of simple plane figures like triangles, squares, etc., using the various metric units of length and area.
- State and use the formulas for finding the area of parallelograms and trapeziums.
- Calculate the area of complex figures involving triangles, rectangles, parallelograms, trapeziums, circles, etc.

## **NOVEMBER**

REVISION FOR MID TERM EXAMS

## **DECEMBER**

MID TERM EXAMS

**JANUARY**

<b>Addendum (Book 1):</b>	<b>CHAPTER # 11 (Book 1)</b>	<b>CHAPTER # 3 (Book 2)</b>	<b>CHAPTER # 6 (BOOK-1)</b>
<b>Symmetry</b>	<b>Percentage</b>	<b>Expansion and Factorization of Algebraic Expressions</b>	<b>Number sequence</b>
Page Numbers: 4-22	Page NO: 249-266	Pg No: 71-108	Pg No: 117-135

Month	Theme or Topic	Subject content	Resource	Activities
<b>January</b>	<b>Addendum Book - 1, Symmetry</b> Pg No.4-22	Students should be able to: <ul style="list-style-type: none"> <li>➤ Recognize line and rotational symmetry (including order of rotational symmetry) in two dimensions, and properties of triangles, quadrilaterals and circles directly related to their symmetries;</li> <li>➤ Recognize symmetry properties of the prism (including cylinder) and the pyramid (including cone);</li> </ul>	<b>Book – 1 Addendum</b> Pg # 4 – 22  Links: www.leranne xt.comwww.k hanacademy. org	Individual activity of making lines of symmetry of basic geometrical shapes on card sheet
	<b>Chap No.11 BOOK -1 Percentage</b> Pg No.249-266	Students should be able to: <ul style="list-style-type: none"> <li>➤ Express a percentage as a decimal and vice versa.</li> <li>➤ Express a percentage as a fraction and vice versa.</li> <li>➤ Express one quantity as a percentage of another.</li> <li>➤ Calculate a quantity given its percentage.</li> <li>➤ Compare two quantities using percentage.</li> <li>➤ Compare quantities for percentages greater than 100%.</li> <li>➤ Increase and decrease a quantity by a given percentage using a ratio or an equation.</li> <li>➤ Solve problems involving discount, commission and GST.</li> <li>➤ Solve problems involving money and convert from one currency to another.</li> </ul>	<b>BOOK -1</b> Pg No.249-266	Group activity, students will make their own shop in which they give discount on some items and they will get profit/loss on the sold items.
	<b>CHAPTER # 6 BOOK – 1 Number sequence</b> Pg No: 117-135	Students should be able to: <ul style="list-style-type: none"> <li>➤ Recognize simple number patterns and continue a given number sequence.</li> <li>➤ State the rules of a number pattern in terms of the general term</li> </ul>	<b>Book – 1</b> Pg # 117-135	

**ATTAINABLE TARGETS:**

**Percentages:**

- Understand the meaning of per cent.
- Work out percentages of 100 and out of 100.
- Demonstrate the ability to calculate percent increases and decreases in real life situations.

**Symmetry:**

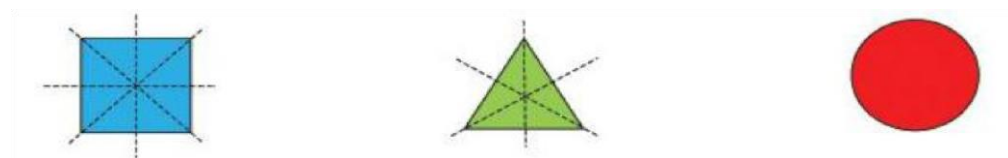
- Must know the practical application of symmetry.

**Symmetry**

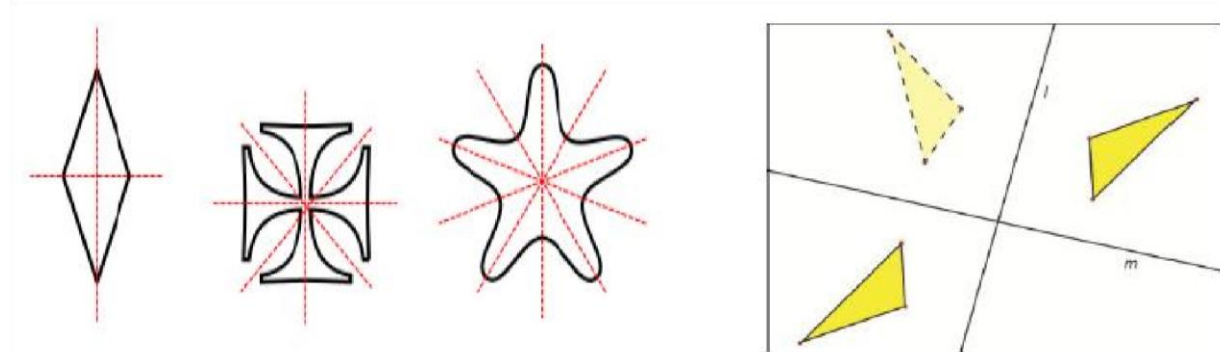
A shape has symmetry where it can be folded in half so that both halves match The told line is the line of symmetry.



Many regular shapes have more than one line of symmetry:



An upper case letter A has a line of symmetry but the letter G has no lines of symmetry.



**Number Sequence:**

- Recognize simple number patterns and continue a given number sequence.
- State the rules of a number pattern in terms of the general term.

**FEBRUARY**

**CHAPTER # 11 (Book 1) (cont.)**

**Percentage**

Page NO:

249-266

**CHAPTER # 3 (Book 2)**

**Expansion and Factorization of Algebraic Expressions.**

Pg No: 71 - 108

**CHAPTER # 14 (BOOK 1)**

**Basic geometrical concept and properties**

Pg No: 333- 343

Month	Theme or Topic	Subject content	Resource	Activities
<b>February</b>	<b>CHAPTER # 11</b> <b>BOOK – 1</b>  <b>Percentage</b> Page NO: 249-266  <b>Expansion and Factorization of Algebraic Expressions</b>  <b>BOOK – 2</b> <b>Chap No.3</b> Pg No.71-108  <b>Basic Geometrical Concepts And Properties.</b>  Chap # 14 <b>BOOK – 1</b> Pg # 333 - 343	Students should be able to: <ul style="list-style-type: none"> <li>➤ Use letters to express generalized numbers and express basic arithmetic processes algebraically, substitute numbers for words and letters in formulae;</li> <li>➤ Transform simple and more complicated formulae;</li> <li>➤ Construct equations from given situations.</li> <li>➤ Perform expansions of algebraic expressions using the rules above.</li> <li>➤ Evaluate numerical expressions using the identities learnt earlier.</li> <li>➤ Factorise algebraic expressions by picking out the common factor.</li> <li>➤ Factorise expressions using the algebraic identities involving perfect squares and difference of squares learnt earlier.</li> <li>➤ Evaluate numerical expressions using factorization.</li> <li>➤ Factorize quadratic expressions.</li> </ul> Students should be able to identify and understand: <ul style="list-style-type: none"> <li>➤ Adjacent angles, Vertically opposite angles, Transversal, Alternate angles, Consecutive interior angles, Corresponding angles.</li> </ul> By the end of the topic, students would be able to : <ul style="list-style-type: none"> <li>➤ Find unknown angles when given in form of adjacent or vertically opposite angles.</li> <li>➤ Find unknown angles forming in case of transversal cutting parallel lines.</li> <li>➤ Recognize alternate, corresponding and interior angles.</li> </ul>	<b>Book – 2</b> Pg # 71 – 108  <b>Workbook – 2</b> Pg # 28 – 33  Links: <a href="http://www.mathsisfun.com">www.mathsisfun.com</a> <a href="http://www.everythingmaths.com">www.everythingmaths.com</a>  <b>Book-1</b> Pg # 333 - 343  <b>W.Book-1</b> Pg # 119 -122  Links: <a href="http://www.mathplayground.com/alienangles">www.mathplayground.com/alienangles</a> <a href="http://www.pbslearningmedia.org/resource/muen-math-g-angles/angles">www.pbslearningmedia.org/resource/muen-math-g-angles/angles</a> <a href="http://www.helpingwithmath.com">www.helpingwithmath.com</a> <a href="http://www.commoncoresheets.com/Angles">www.commoncoresheets.com/Angles</a>	GROUP PRESENTATION

**ATTAINABLE TARGETS:**

**Expansion and Factorization of Algebraic Expressions:**

- Student will be able to determine the factors of algebraic forms.
- Student will be able to determine through identities.

**Basic geometrical concept and properties:**

- Students will be able to find unknown angles using the properties of: (a) angles at a point, (b) vertically opposite angles, (c) adjacent angles on a straight line.
- Find unknown angles using the properties of: (a) corresponding, (b) alternate, (c) interior angles for two parallel lines cut by a transversal.



**MARCH**

**Chap # 15 (Book - 1)**  
**Angle Properties of polygons,**  
 Page No. 357-380

**Chap # 6 (Book - 2)**  
**Pythagoras' theorem**  
 Page numbers: 177 - 187

Month	Theme or Topic	Subject content	Resource	Activities
<b>March</b>	<b>Angle Properties Of polygons</b>  <b>Book 1, Chap No. 15</b> Page No.357-380	Students should be able to: ➤ State the properties of a triangle such as (a) Sum of interior angles = 180. (b) Exterior angle = sum of interior opposite angles, and use them to solve problems. ➤ State and use the geometrical properties of (a) trapeziums, (b) parallelograms, (c) rectangles, (d) rhombuses, (e) squares and (f) Kites, and use them to solve problems involving these figures. ➤ State the sum of the interior angles of a convex polygon and the sum of its exterior angles and use them to solve problems involving angle properties of convex polygons.	<b>Book -1</b> Pg # 357 – 380  <b>Workbook – 1</b> Pg # 126 – 139  <b>Book - 1</b> Pg # 291 -324  <b>Workbook -1</b> Pg # 105 – 115  Links:  <a href="http://www.mytestbook.com">www.mytestbook.com</a>  <a href="http://www.mathworksheets4kids.com">www.mathworksheets4kids.com</a>  <a href="http://www.khanacademy.org">www.khanacademy.org</a>  <a href="http://www.mathisfun.com">www.mathisfun.com</a>	Grouped activity of making different polygons by using different color chart paper.
	<b>Pythagoras' Theorem</b>  <b>Book 2, Chap No.6</b>  Pg No.(177-187)	Students should be able to: ➤ Identify a right-angled triangle and its hypotenuse. ➤ Define the Pythagoras' theorem and its converse and use proper symbols to express the relationship. ➤ Apply the Pythagoras' theorem to find the unknown side of a right-angled triangle when the other two sides are given. ➤ Solve word problems involving right-angled triangles using Pythagoras' theorem	<b>Book - 2</b> <b>Pg # 177 -187</b> <b>Workbook -2</b> <b>Pg # 59 – 70</b>  Links: <a href="http://www.onlinemathlearning.com">www.onlinemathlearning.com</a> <a href="http://www.khanacademy.org">ww.khanacademy.org</a> <a href="http://www.math-only-math.com">www.math-only-math.com</a>	

## ATTAINABLE TARGETS:

### Angle Properties Of polygons:

- Compare and contrast the properties of regular and irregular polygons.
- Identify polygons as either regular or irregular polygons up to a decagon.

### Pythagoras' Theorem:

- Identify and apply the Pythagorean Theorem to find the missing hypotenuse of a triangle.
- Identify and apply the Pythagorean Theorem to find the missing leg of a triangle.
- Look for and regularity in repeated reasoning.

## APRIL

REVISION FOR FINAL EXAMS

## MAY

FINAL EXAMS

### Breadth of Study:

During the key stage, students should be taught the knowledge, skills and understanding through:

- Activities that ensure they become familiar with, and confident using, standard procedures for the range of calculations appropriate to this level of study;
- Solving familiar and unfamiliar problems in a range of numerical, algebraic and graphical contexts and in open-ended and closed form;
- Using standard notations for decimals, fractions, percentages, ratio and indices;
- Activities that show how algebra, as an extension of number using symbols, gives precise form to mathematical relationships and calculations;
- Activities in which they progress from using definitions and short chains of reasoning to understanding and formulating proofs in algebra and geometry;
- A sequence of practical activities that address increasingly demanding statistical problems in which they draw inferences from data and consider the uses of statistics in society;

### Assessment and Homework:

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

$a \times b$ ,  $ab$ ,  $a.b$  a multiplied by b

$a \div b$ ,  $a/b$  a divided by b

## Resource List

### Books:

- Sang, T. et al, 2008, New Syllabus Mathematics Work book 1 & 2 (6th Edition), Singapore; Oxford University Press

### Websites:

- [www.nrich.com](http://www.nrich.com)
- [www.hoddereducation.com](http://www.hoddereducation.com)
- [www.collinseducation.com](http://www.collinseducation.com)
- [www.pearsonschoolsandfecolleges.co.uk](http://www.pearsonschoolsandfecolleges.co.uk)
- [www.hoddereducation.com](http://www.hoddereducation.com)
- [www.lettsandlonsdale.com](http://www.lettsandlonsdale.com)
- [www.counton.org](http://www.counton.org)
- [www.math.com](http://www.math.com)
- [www.maths-help.co.uk](http://www.maths-help.co.uk)
- [www.mathsnet.net](http://www.mathsnet.net)