Books:
Lu jitan, New Syllabus Primary Mathematics 5 along with practice books Saand Sb, Singapore; Oxford University Press

Monthly Syllabus for the year 2016-17

<table>
<thead>
<tr>
<th>Months</th>
<th>Topics</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>August</td>
<td>• Whole Numbers</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>• Four Operations</td>
<td>2 Weeks</td>
</tr>
<tr>
<td></td>
<td>• Activity Calendar (Mental Math)</td>
<td>0.5 Weeks</td>
</tr>
<tr>
<td>September</td>
<td>• Four Operations</td>
<td>2 Week</td>
</tr>
<tr>
<td></td>
<td>• Angles</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>• Algebra (Add/Sub)</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>Activity Calendar/Mental Maths</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>• Algebra (Addition And Subtraction)</td>
<td>0.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Average</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>• Unknown Angles of Triangles</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>• Introduction and Construction of Circle Activity Calendar Mental Maths</td>
<td></td>
</tr>
<tr>
<td>November / December</td>
<td>• Area of Triangle &amp; Composite Figure</td>
<td>1.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Ratio</td>
<td>0.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Activity Calendar Mental Maths</td>
<td>2.5 Weeks</td>
</tr>
<tr>
<td></td>
<td>• Revision</td>
<td>2 Weeks</td>
</tr>
<tr>
<td>January</td>
<td>• Fractions</td>
<td>2.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Construction of Triangles Activity Calendar Mental Maths</td>
<td>1.5 Weeks</td>
</tr>
<tr>
<td>February</td>
<td>• Percentage</td>
<td>1.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Decimals</td>
<td>2.5 Weeks</td>
</tr>
<tr>
<td>March</td>
<td>• Algebra (Multiplication and Division)</td>
<td>2 Week</td>
</tr>
<tr>
<td></td>
<td>• Four Sided Figure</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>• Bar Graph</td>
<td>1 Week</td>
</tr>
<tr>
<td></td>
<td>Activity Calendar Mental Maths</td>
<td></td>
</tr>
<tr>
<td>April / May</td>
<td>• Revision</td>
<td>3.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Activity Calendar Mental Maths</td>
<td>0.5 Week</td>
</tr>
<tr>
<td></td>
<td>• Final Exams</td>
<td>2 Weeks</td>
</tr>
</tbody>
</table>
Syllabus Content:

**SUB TOPICS**
- NUMBERS BEYOND 100000
- PRIME FACTORIZATION
- L.C.M
- H.C.F

**SPECIFIC OBJECTIVES**
By the end of the topic students will be able to understand:
1) Read and write the numbers Beyond 100,000
2) Recognize the place value of any digit in a particular number.
3) Find prime factors of bigger values.
4) Find L.C.M and H.C.F of two or three given numbers.

**PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:**
By attaining specific objectives, students will be able to perform following real life tasks:

1) Assisting their parents while shopping (in big malls as well as in small markets) by reading figures on price tags, by comparing.

2) L.C.M and H.C.F are used in situations like:
   Two lighthouses flash their lights every 20s and 30s respectively. Given that they flashed together at 7pm, when will they next flash together?

3) Also used in finding the largest or smallest, maximum or minimum number of things in any case.

**PAGE NUMBERS OF:**
- BOOK Pg # 2-24
- WORKBOOK 5A Pg # (1-20)

**ADDITIONAL RESOURCES:**
1) http://www.onlinemathlearning.com/lcm-gcf-word-problems
2) http://www.math-drills.com/place_value_worksheets
3) http://mathcrush.com/read_n_write_worksheets
ATTAINABLE TARGETS:

- Read and write the numbers beyond 100,000 in words and numerals and identify numbers up to a billion.
- Identify the place value
- Compare and arrange the numbers
- Rounding off in terms of tens, hundreds and thousands.
- Identify Prime and Composite numbers.
- Calculate the L.C.M. and H.C.F.

SAMPLE QUESTIONS:

1) Write any 7 digit number and answer the following question:
   a) Form a greatest and smallest 7 digit number. Write it in words form.
   b) Write standard form of these numbers.
   c) Use these digits and make any 4-digit numbers (at least 4) and arrange them in ascending order.
   d) Find the total of the smallest and largest numbers form. Estimate your answer to the nearest thousand.

2) An unknown number has been rounded off to the nearest thousand and the rounded value is 7000. What is the number.

3) Find out the H.C.F and L.C.M of 60,120.
SUB TOPICS
MULTIPLICATION
DIVISION
ESTIMATION
WORD PROBLEM
ORDER OF OPERATIONS

SPECIFIC OBJECTIVES
By the end of the topic students will be able to understand:

1) Multiply and divide the numbers by 10 and its multiples directly.

2) Estimate the sum, difference, and product of different values.

3) Solve the expressions containing multiple operations.

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:
By attaining specific objectives, students will be able to perform the following real-life tasks:

1) Doing quick calculations of values including 10 and its multiples.

2) Estimating time, money, quantity, weight, and many more.

3) Multitasking in order.

PAGE NUMBERS OF:
BOOK Pg # 29-51
WORKBOOK 5A Pg # (30-40)

ADDITIONAL RESOURCES:
1) www.mathplayground.com/order_of_operations
2) www.math-drills.com/powersoft
3) www.mathaid.com
4) www.sheppardsoftware.com/mathgames/round/mathman_round_addition
ATTAINABLE TARGETS:

- Multiply and divide the numbers by 10, 100 AND 1000 Mentally.
- Perform estimation and find out reasonable answers.
- Manipulate combined operations.
- To solve the story sums (word problems) and determine the unknown value.

SAMPLE QUESTIONS:

1) Solve directly, 15478× or by 10, 100 or 1000
2) 9x5=50 – _______________
3) A library has 25486 books. A generous man donated some books to the library. The number of books in the library has now reached to 26728. How many books did the man donate? Round off your answer to nearest thousand.
4) Solve the following sums.
   1) 100-19x5+65
   2) (32 – 11) ÷ 7+23
ATTAINABLE TARGETS:

- Define what angles are and how they are formed using daily life objects/examples.
- Identifying, describing, naming, and drawing angles (e.g., right, acute, obtuse, straight, ).
- Identify the adjacent and vertically opposite angles.
- Determining angles on a straight line, at a point, supplementary and complementary angles.
- Find the unknown angle.
- Apply vertical angles property of intersecting lines.

SAMPLE QUESTIONS:

Figures will be given students will identify the angles and calculate the value of missing angle.

Use figure A. \( \angle ABC = 145 \). \( \angle X \) is equal to ________________
### Specific Objectives

By the end of the topic, students will be able to understand:

1. Find average of numerous values
2. Solve problem sums include average.
3. Solve problems and find unknown when average is given.

### Practical Needs to Attain Specific Objectives

By attaining specific objectives, students will be able to perform following real life tasks:

1. Finding average study hours per day.
2. Calculating their average expense of the week from their pocket money.
3. Finding average cost of different things they buy, average quantity of things they use and many more.
4. Finding average temperature of the month.

### Additional Resources

1. [www.mathsisfun.com/data/mean-machine](http://www.mathsisfun.com/data/mean-machine)

### Page Numbers of:

**BOOK** Pg # 166-173  
**WORKBOOK 5B** Pg # (22-29)
ATTAINABLE TARGETS:

- Interpret the formula.
- Calculate the average and manipulate the formula to find out any other unknown with the help of given data.
- Find total amount if average is given.

SAMPLE QUESTIONS:

1) Find the average of 6, 8, 10, 12 and 14.
2) Find the average of all composite numbers between 6 and 34 that are divisible by 5.
3) The average of 2 numbers is 40. One number is 20. Find the other number.
4) \[ \frac{7+6+3+\_+\_}{4} = \frac{24}{4} = \]

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:

By attaining specific objectives students will be able to perform following real life tasks:

1) Finding area to estimate the required material to cover any triangular surface.
2) Almost all two dimensional shapes (apart from a circle) can be made up of a series of triangles arranged in a certain way. So finding area of a triangle helps in finding area of many other two dimensional shapes if required.

SPECIFIC OBJECTIVES:

By the end of the topic students will be able to understand:

1) Find unknown angle of simple as well as special triangle.
2) Find area of different triangles.
3) Differentiate between the different triangles.

PAGE NUMBERS OF:

BOOK Pg # 223-240
WORKBOOK 5B Pg # (79-88)

ADDITIONAL RESOURCES:

1) www.ixl.com/math/grade-5/area-of-triangles
2) www.gamesforthinkers.org
3) www.heplinigwithmath.com
ATTAINABLE TARGETS:

- Get familiarize with triangles and its types
- Identify triangle according to its sides and its angles
- Find unknown angle of a triangle
- Identify the base and height of a triangle
- Using formula to calculate area of a triangle
- Recognize, use and communicate with one another about triangles and their properties

SAMPLE QUESTIONS:

For identification of triangles, question will be based in the form of figures or in the form of mental math question or in the form of word problems.

1. Look at the figure given and determine the size of measuring angle a? (fig a)
2. Calculate the area of triangle given. (fig b)
INTRODUCTION AND CONSTRUCTION OF CIRCLE

SUB TOPICS

INTRODUCTION OF CIRCLE
BASIC DEFINITIONS/TERMINOLOGIES RELATED TO CIRCLE
CONSTRUCTION OF CIRCLE USING PROTRACTOR

SPECIFIC OBJECTIVES
By the end of the topic students will be able to understand:

1) Define Circle and terminologies related to it.
2) Relate circle and real life examples
3) Construct the circle with protractor the different triangles.

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:
By attaining specific objectives students will be able to perform following real life tasks:
1) They can find examples of circle everywhere around them.
2) Can draw different pattern.

PAGE NUMBERS OF:
BOOK: Questions from exercise will be done.
WORKBOOK: Questions from exercise will be done.

ADDITIONAL RESOURCES:
2) www.mathgoodies.com/lessons/vol2/geometry.htm
3) study.com/academy/lesson/parts-of-a-circle.html
ATTAINABLE TARGETS:

- To familiarize the students with Circle and its terminologies.
- Enable students to draw/construct circle using the given data/information.
- Relate circle with the daily life objects.

SAMPLE QUESTIONS:

1. Define the terminology radius, diameter, chord etc.
2. Construct a circle with radius 5cm.
3. _____________ the point equidistant from the points on the circle.
4. Construct a circle with diameter 36cm.
By the end of the topic students will be able to understand:

1) Compare different values
2) Simplifying equivalent ratios.
3) Find unknown ratios.
4) Solve story sums involving ratios.

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:
By attaining specific objectives students will be able to perform following real life tasks:

1) Assisting their mothers in baking and cooking, dealing with different quantities and ratios of ingredients.
2) Find ratio of distance and time while travelling.
3) Finding ratio of weight and cost of different things while shopping.

ADDITIONAL RESOURCES:
1) www.arcademics.com/games/ratio-stadium
2) mathsnacks.com/ratiorsumble_game
3) www.brainpop.com/games/ratiorumble
4) edhelper.com/ratios.htm
5) helpingwithmath.com
6) www.mathinenglish.com
ATTAINABLE TARGETS:

- Find the missing ratio.
- Equivalent ratio, missing value in a pair of equivalent ratio.
- Convert into simplest form
- Solve 2-step word problems.
- Find ratio of 2 or 3 given quantities.

SAMPLE QUESTIONS:

1. In a school there 120 boys and 180 girls. 40 of the boys are under 10 years and 140 of the girls are under 10 years. Use the given information to find
   a) The ratio of the number of boys to the number of girls
   b) The ratio of the number of boys who are less than 10 to the number of boys who are 10 or older. (in simplest form)
2. Are these ratios equivalent? 3:4 and 12:16
3. Simplify the ratio 8: 16.
4. Complete the ratio table.

| 8  | 24  | 27  | 54  | 81  |
SUB TOPICS

ADDITION AND SUBTRACTION OF FRACTIONS AND MIXED NUMBERS.
MULTIPLICATION OF FRACTIONS AND MIXED NUMBERS.
DIVISION OF A FRACTION BY A WHOLE NUMBER AND FRACTION.
WORD PROBLEMS.

SPECIFIC OBJECTIVES

By the end of the topic students will be able to understand:

1) Add and subtract proper, improper fractions and mixed numbers as well.
2) Multiply fractions with fractions and a mixed number.
3) Divide fractions with fractions and a mixed number.

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:

By attaining specific objectives students will be able to perform following real life tasks:

1) Helping mothers in measuring ingredients while cooking or baking even when quantities are given in fractions.
2) Evaluating any team’s performance in a year. (e.g., A team won 4/5 of the matches, when total number of games played was 25)
3) Comparing prices of products while shopping (such as the price of this product is 2/3 of that product).

PAGE NUMBERS OF:

BOOK Pg # 60-92
WORKBOOK 5A Pg # 90-118

ADDITIONAL RESOURCES:

1) www.mathpalyground.com
2) math-play.com/math-fractions-games
3) www.maths-games.org/fraction-games
4) www.math-play.com/Fractions-Jeopardy
5) www.funbrain.com
ATTAINABLE TARGETS:

- Recognize and work with mixed numbers/improper fractions
- Add and Subtract fractions with different denominators.
- Multiply proper fractions /mixed numbers with whole numbers
- Perform division involving fractions.
- To perform all the four operations
- Solve word problems

SAMPLE QUESTIONS:

1. Evaluate  
   a) \( \frac{1}{2} + \frac{5}{32} \)  
   b) \( \frac{15}{16} - \frac{3}{4} \)

2. Multiply the following fractions  
   a) \( \frac{63}{24} \times \frac{12}{36} \)  
   b) \( \frac{5}{10} \times \frac{25}{38} \)

3. Divide the following  
   a) \( \frac{64}{36} \div \frac{8}{48} \)

4. 40 students joined the soccer club. \( \frac{5}{8} \) were the boys. How many girls were there?
## Chapter 10: Construction of Triangles

### Sub Topics

**Construction of a Triangle**

### Specific Objectives

By the end of the topic, students will be able to:

1. Learn the use of protractor.
2. Measure angles.
3. Construct triangles.

### Practical Needs to Attain Specific Objectives

Learning how to construct a triangle will help students in future in following fields:

1. Architecture, engineering, chemistry, etc.

2. In architecture, similar triangles are used to represent doors and how far they swing open. It is used in construction to measure out the room and scale size.

3. If there is any most important shape in engineering, it is the triangle. Unlike a rectangle, a triangle cannot be deformed without changing the length of one of its sides or breaking one of its joints.

### Additional Resources

2. [www.mathinary.com/triangle_construction](http://www.mathinary.com/triangle_construction)
3. [www.onlinemathlearning.com/construct_triangles](http://www.onlinemathlearning.com/construct_triangles)

### Page Numbers of:

**BOOK**: Handout is going to be provided

**WORKBOOK**: Worksheet will be given
ATTAINABLE TARGETS:

- To know what the acronyms SAS, ASA and SSS stand for
- To understand the differences between SAS, ASA and SSS
- To be able to construct SAS, ASA and SSS triangles using a ruler and a protractor.

SAMPLE QUESTIONS:

1) Construct a triangle given that $\angle a=41^\circ$, $\angle b=33^\circ$ and $AB=7$ cm.

2) Construct a $\Delta$ ABC in which $AB = AC = 7.2$ cm, $BC = 9$ cm.

3) Construct a triangle in which $PQ=9.5$ cm, $QR=7$ cm and $\angle P=45$. 
### SUB TOPICS
- Multiplication and Division by a Whole Number
- Multiplication and Division by a Decimal Number
- Conversions Including Decimals
- Four Operations Using Decimal Numbers

### SPECIFIC OBJECTIVES
By the end of the topic students will be able to:
1) Convert fractions into decimals.
2) Add, subtract, multiply or divide all kinds of decimal numbers.
3) Convert measurements in different units (including decimal numbers).

### PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:
By attaining specific objectives students will be able to perform some real-life tasks such as:
1) Summing up grocery bills or bills at restaurants.
2) Doing every day calculations including fractional values quickly by changing them into decimals.
3) Calculate amount left after shopping.
4) Equally distributing quantities even if the total amount or quantity is not completely divisible.

### PAGE NUMBERS OF :
- BOOK Pg# 117-144
- WORKBOOK 5A Pg#149-178

### ADDITIONAL RESOURCES:
1) [www.coolmath.com](http://www.coolmath.com)
2) [www.mathnook.com/math/skill/decimalgames](http://www.mathnook.com/math/skill/decimalgames)
ATTAINABLE TARGETS:

- Read and write numbers in decimal notation.
- Place the decimal point at the correct location when any mathematical operation is performed.
- Convert measurement from smaller unit to larger unit or vice versa
- Rounding off a decimal number to the given place value.
- Estimate the answer to a decimal problem
- Solve application problems that require decimal four operations.

SAMPLE QUESTIONS:

1. Solve the following
   a) $3.2 \times 10$
   b) $33.6 \times 100$
   c) $206 \div 1000$

2. The price of 1 apple is 1.20$. The price of 1 banana is 0.88$. What is the price of 15 apples and 12 bananas?

3. Add 15.64 and 13.07 and estimate the answer to the nearest whole number.

4. Subtract 23.570 and 12.75.
## Chapter 6: Percentage

### Sub Topics
- Percentage
- Part and Whole
- Word Problems

### Specific Objectives
By the end of the topic students will be able to:

1. Express decimal and fraction as percentage and vice versa.
2. Find out percentage of given fractions.
3. Find value of given percentage.
4. Solve Problem sums including percentage.

### Practical Needs to Attain Specific Objectives
By attaining specific objectives students will be able to perform some real life tasks:

1. Calculating their own tests and exams percentage.
2. Evaluating different sales discount offers.
3. Evaluating many daily life problems including percentage.

### Page Numbers of:
- **Book**: Pg# 152-161
- **Workbook 5B**: Pg# 1-8

### Additional Resources:
1. [www.gamesforthinkers.org](http://www.gamesforthinkers.org)
2. [www.mattieonline.com](http://www.mattieonline.com)
3. [www.math-play.com](http://www.math-play.com)
4. [www.sheppardsoftware.com/mathgames/fractions/FractionsToDecimals](http://www.sheppardsoftware.com/mathgames/fractions/FractionsToDecimals)
ATTAINABLE TARGETS:

- Describe the meaning of percent.
- Represent a number as decimal, fraction and percent.
- Write fraction and decimal as percentage and vice versa
- Find percentage
- Find the value if Percentage is given
- Solve word problems involving percentage.
- Calculate percentage in real life context.

SAMPLE QUESTIONS:

1. Convert into percentage.
   a) \( \frac{12}{25} \)  
   b) 0.48

2. 200 people watched a movie. 55% of the people liked the movie. How many people did not like the movie?

3. Calculate 200% of 41.

4. Mr. Ali wants to buy a bicycle which costs Rs.35000. A discount of 20% is also offered over the price. What will be the original price Mr. Ali pay?

5. Convert the 36% into fraction in its lowest term.
SUB TOPICS
ADDITION ALGEBRAIC TERMS
SUBTRACTION OF ALGEBRAIC TERMS
MULTIPLICATION OF ALGEBRAIC TERMS
DIVISION OF ALGEBRAIC TERMS

SPECIFIC OBJECTIVES
By the end of the topic students will be able to:
1) Add and subtract algebraic terms
2) Multiply algebraic terms
3) Divide algebraic terms.

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:
This simple addition and subtraction, multiplication and division of algebraic terms will help students in future for following things:
1) Calculating costs of various things even when some original values are missing.
2) Finding unknown angles of complex figures.
3) Deriving formulas used at higher level.

PAGE NUMBERS OF:
BOOK : Handout
WORKBOOK : Worksheets are going to be given.

ADDITIONAL RESOURCES:
1) www.ixl.com/math/algebra.../multiplication-and-division
2) www.mathplayground
3) www.coolmath-games.com
ATTAINABLE TARGETS:
ALGEBRA (ADDITION and SUBTRACTION):

- Identify constant, variable and exponents
- Identify equation and expression
- Perform addition and subtraction.
- ALGEBRA: MULTIPLICATION and DIVISION
  - The basic rules of multiplication and division.
  - Do multiplication and division with or without parentheses

SAMPLE QUESTIONS:

1. Simplify:
   i) $12a+27b+24a-3c$
   ii) $q+39r+27q-48q$
   iii) $x^2 - 2x + x^2 - 27 + 3x - 26$
   iv) $5p + 2q - 8p + 3q + 15$

2. Subtract $35pq + 30pq^2 - 14$ FROM $-pq + 10 pq^2 - 28$

3. Simplify:
   
   a) $2x \times 3y \times 5 y^2$
   b) $64pq^3 \div 4pq$
   c) $4a^3. 5x. 7y$
   d) $-9a^3b^2x31ab^2c$
<table>
<thead>
<tr>
<th>SUB TOPICS</th>
<th>SPECIFIC OBJECTIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDENTIFYING FOUR SIDED FIGURES</td>
<td>By the end of the topic students will be able to:</td>
</tr>
<tr>
<td>PROPERTIES OF FOUR SIDED FIGURES</td>
<td>1) Identify, define and describe numerous four sided figures.</td>
</tr>
<tr>
<td>VOLUME OF CUBE</td>
<td>2) Define volume.</td>
</tr>
<tr>
<td>VOLUME OF CUBOID</td>
<td>3) Understand what are cubes and cuboids.</td>
</tr>
<tr>
<td></td>
<td>4) Use the formula to find the volume of cube and cuboid.</td>
</tr>
<tr>
<td></td>
<td>5) Identify different real life examples around related to the topic.</td>
</tr>
</tbody>
</table>

**PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:**

By attaining Specific objectives, students will be able to perform following real life tasks:

1) Identify different four sided figures whenever needed.
2) Using Different properties of quadrilaterals while analyzing or Calculating Quantity required of any material to cover any four sided surface at home.
3) Use the concept of volume in the manufacturing of objects such as sweet boxes, biscuit boxes

**PAGE NUMBERS OF:**

- BOOK Pg # 251-264
- WORKBOOK 5B Pg# 101-110

**ADDITIONAL RESOURCES:**

1) www.sheppardsoftware.com/mathgames/geometry/.../QuadShapesShoot
2) www.turtlediary.com
2) www.xpmath.com/forums/arcade.php?do=play&game
ATTAINABLE TARGETS:

- Identify the quadrilaterals
- The properties of quadrilaterals
- Find similarities and differences in figures
- Understand volume and its use.
- Use formula to find out the volume of cube and cuboid.

SAMPLE QUESTIONS:

Question will be given either in figure form or in descriptive form. Students have to identify the figure or find similarities or differences; write the basic properties of the figures.

For the volume of cubes and cuboid, figure will be given along with the dimensions. Formulae will be used to find the missing data.
SUB TOPICS

AREA OF COMPOSITE FIGURES SUCH AS L, T SHAPE ETC.

SPECIFIC OBJECTIVES

By the end of the topic students will be able to:

1. What is a composite figure
2. How to calculate the area of such figures
3. What is the use of studying such composite figures.

PRACTICAL NEEDS TO ATTAIN SPECIFIC OBJECTIVES:

By attaining specific objectives students will be able to perform real life tasks:

Such as area of buildings involving different shape, etc.

PAGE NUMBERS OF:

BOOK: Questions from exercise will be given.
WORKBOOK: Questions from exercise will be given.

ADDITIONAL RESOURCES:

1) www.khanacademy.org/
2) www.studyladder.com
3) www.ck12.org/geometry
4) www.transum.org/software/SW/Starter_of_the.../Areas_of_Composite_Shape
ATTAINABLE TARGETS:
- Define what composite figure is.
- Differentiate between composite figure and other figures.
- Calculate the area of the figure given.

SAMPLE QUESTIONS:

Question will be given either in figure form. Students have to identify the figures and and calculate the area using the formulas or specific method.

FINAL EXAMS

Assessment and Homework:

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

Mathematical Symbols:
- +  ADDITION
- -  SUBTRACTION
- ×  MULTIPLICATION
- ÷  DIVISION
- <  LESS THAN
- >  GREATER THAN
- =  EQUALS TO
- ~  APPROXIMATE
- /  FRACTION
- :  RATIO
- %  PERCENTAGE
- ml  MILLI LITRE
- l  LITRE
- cm  CENTIMETRES
- m  METRES
- Kg  KILOGRAM
- G  GRAMS
- °  DEGREE
- ||||  PARALLEL LINES
- ↔  LINE
- ↑  RAY
- −  LINE SEGMENT
- ↓  PERPENDICULAR LINES
- □  ANGLE
- ▲  TRIANGLE

Important Formulae:
- P = 2(l + b)  PERIMETER OF RECTANGLE
- P= 4 × l PERIMRTER OF SQUARE
- P = l+b +h  PERIMETER OF TRIANGLE
- A = l× b AREA OF RECTANGLE
- A = L × L AREA OF SQUARE
- A = ½ b × h  AREA OF TRIANGLE
- Av. = SUM OF QUANTITIES / NUMBER OF QUANTITIES.
- % = OBTAINED MARKS/ TOTAL MARKS × 100
SUM OF ANGLES AT A POINT = 360°
SUM OF ANGLES ON STRAIGHT LINE = 180°
SUPPLEMENTARY ANGLES = 90°
COMPLEMENTARY ANGLES = 180°
SUM OF ANGLES IN QUADRILATERAL = 360°
SUM OF ANGLES IN A TRIANGLES = 180°

Keywords:

- **ABACUS** = An Abacus is a counting tool used in mathematics for early learners. The Abacus helps provide a concrete understanding of counting, adding, subtracting and dividing. The Abacus contains beads or disks that can be moved up or down or from side to side.

- **ADDEND** = A number which is involved in addition. Numbers being added are considered to be the addends. eg. 3 + 2 = 4 The three and the two are the addends.

- **ALGEBRA** = A branch of mathematics that substitutes letters for numbers.

- **Coefficient** - A factor of the term. x is the coefficient in the term x(a + b) or 3 is the coefficient in the term 3y.

- **Common Factors** - A factor of two or more numbers. A number that will divide exactly into different numbers.

- **Complementary Angles** - The two angles involved when the sum is 90°.

- **Composite Number** - A composite number has at least one other factor aside from its own. A composite number cannot be a prime number.

- **Constant** - A value that doesn’t change.

- **Congruent** - Objects and figures that have the same size and shape. The shapes can be turned into one another with a flip, rotation or turn.

- **Denominator** - The denominator is the bottom number of a fraction. (Numerator is the top number) The Denominator is the total number of parts.

- **Degree** - The unit of an angle, angles are measured in degrees shown by the degree symbol: °

- **Diameter** - A chord that passes through the center of a circle. Also the length of a line that cuts the shape in half.

- **Difference** - The difference is what is found when one number is subtracted from another. Finding the difference in a number requires the use of subtraction.

- **Digit** - Digits are making reference to numerals. 176 is a 3 digit number.

- **Dividend** – The number that is being divided. The number found inside the bracket.

- **Divisor** - The number that is doing the dividing. The number found outside of the division bracket.

- **Equilateral** - All sides are equal.

- **Even Number** - A number that can be divided or is divisible by 2.
- **Evaluate** - To calculate the numerical value.

- **Exponent** - The number that gives reference to the repeated multiplication required. The exponent of $3^4$ is the 4.

- **Factor** - A number that will divide into another number exactly. (The factors of 10 are 1, 2 and 5).

- **Fraction** - A way of writing numbers that are not whole numbers. The fraction is written like $1/2$.

- **Geometry** - The study of lines, angles, shapes and their properties. Geometry is concerned with physical shapes and the dimensions of the objects.

- **Greatest Common Factor** - The largest number common to each set of factors that divides both numbers exactly. E.g., the greatest common factor of 10 and 20 is 10.

- **Improper Fraction** - A fraction whereby the denominator is equal to or greater than the numerator. E.g., $6/4$

- **Isosceles** - A polygon having two sides equal in length.

- **Kilometer** - A unit of measure that equals 1000 meters.

- **Like Fractions** - Fractions having the same denominator. *(Numerator is the top, denominator is the bottom)*

- **Line** - A straight infinite path joining an infinite number of points. The path can be infinite in both directions.

- **Line Segment** - A straight path that has a beginning and an end - endpoints.

- **Mixed Numbers** - Mixed numbers refer to whole numbers with fractions or decimals. Example 3 1/2 or 3.5.

- **Monomial** - An algebraic expression consisting of a single term.

- **Multiple** - The multiple of a number is the product of the number and any other whole number. *(2,4,6,8 are multiples of 2)*

- **Multiplication** - Often referred to as 'fast adding'. Multiplication is the repeated addition of the same number $4 \times 3$ is the same as saying $3 + 3 + 3 + 3$.

- **Numerator** - The top number in a fraction. In $1/2$, 1 is the numerator and 2 is the denominator. The numerator is the portion of the denominator.

- **Odd Number** - A whole number that is not divisible by 2.

- **Operation** - Refers to addition, subtraction, multiplication or division which are called the four operations in mathematics or arithmetic.

- **Order of Operations** - A set of rules used to solve mathematical problems. BEDMAS is often the acronym used to remember the order of operations. BODMAS stands for *brackets, Of, division, multiplication, addition and subtraction*.
- **Parallelogram** - A quadrilateral that has both sets of opposite sides that are parallel.

- **Percent** - A ratio or fraction in which the second term on denominator is always 100.

- **Perimeter** - The total distance around the outside of a polygon. The total distance around is obtained by adding together the units of measure from each side.

- **Perpendicular** - When two lines or line segments intersect and form right angles.

- **Prime Numbers** - Prime numbers are integers that are greater than 1 and are only divisible by themselves and 1.

- **Product** - The sum obtained when any two or more numbers are multiplied together.

- **Proper Fraction** - A fraction where the denominator is greater than the numerator.

- **Protractor** - A semi-circle device used for measuring angles. The edge is subdivided into degrees.

- **Quotient** - The solution to a division problem.

- **Ratio** - The relation between to quantities. Ratios can be expressed in words, fractions, decimals or percents. E.g., the ratio given when a team wins 4 out of 6 games can be said a 4:6 or four out of six or 4/6.

- **Ray** - A straight line with one endpoint. The line extends infinitely.

- **Rectangle** - A parallelogram which has four right angles.

- **Remainder** - The number that is left over when the number cannot be divided evenly into the number.

- **Rhombus** - A parallelogram with four equal sides, sides are all the same length.

- **Subtraction** - The operation of finding the difference between two numbers or quantities. A process of ‘taking away’.

- **Supplementary Angles** - Two angles are supplementary if their sum totals 180°.

- **Trapezoid** - A quadrilateral with exactly two parallel sides.

- **Triangle** - Three sided polygon.

- **Variable** - When a letter is used to represent a number or number in equations and or expressions. E.g., in 3x + y, both y and x are the variables.

- **Vertex** - A point of intersection where two (or more) rays meet, often called the corner. Wherever sides or edges meet on polygons or shapes. The point of a cone, the corners of cubes or squares.

- **Whole Number** - A whole number doesn't contain a fraction. A whole number is a positive integer which has 1 or more units and can be positive or negative.
Resource List

Books:

- Dr Fong Ho Kheong, Chelvi Ramakrishnan, Gan Kee Soon (2nd edition), My Pals are her Book 1a and 1b, Singapore; Marshall Cavendish Education
- Lawler, Dr Graham (4th Edition), Understanding Maths Book 1,2
- Winnie Tan and S. T. Rajah, Progressive Mathematics Book 1,2, Oxford University Press;
- SPMG Mathematics Book 1,2