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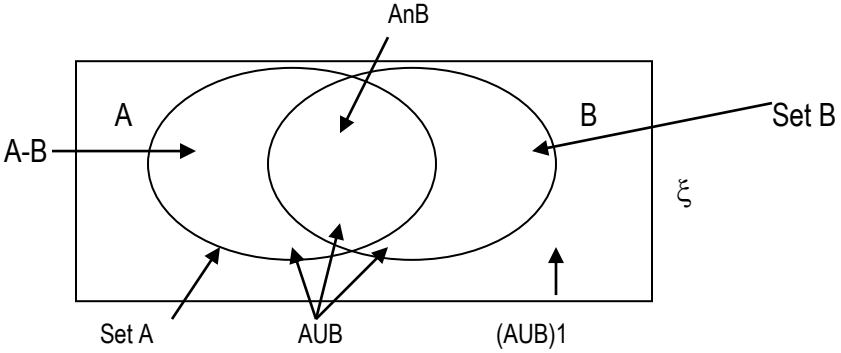
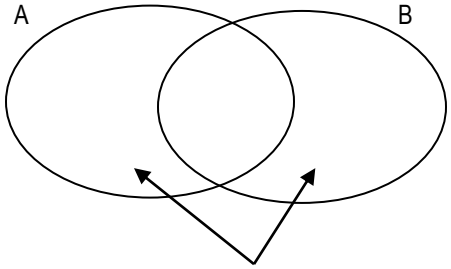
P.7 MATHEMATICS LESSON NOTES TERM I

TOPIC ONE:
TOPIC: SET CONCEPTS
LESSON 1:
SUB TOPIC: REVIEW OF SETS
CONTENT: Regions/describing points of venn diagram



Learners will be guided in describing the different regions on venn diagrams.



(A∩B)¹

EVALUATION ACTIVITY:
MK New Edition BK 7 Pg 5 and Pgs 12 – 13
Remarks:

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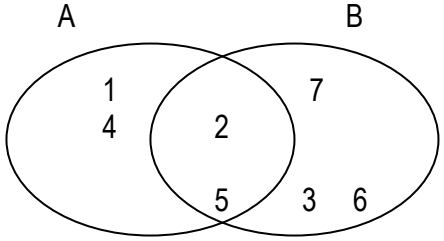
LESSON 2:
SUB TOPIC: LISTING ELEMENTS
CONTENT: Given the venn diagram below:



List members of the following using the above venn diagram:
(i) Set B
(ii) Set A¹
(iii) (BnA)
(iv) (AuB)
(v) A-B

EVALUATION ACTIVITY:
Mathematics Revision Hand Book Primary 5, 6, & 7 Pg 18 Exercise 1:2
Remarks:

_____

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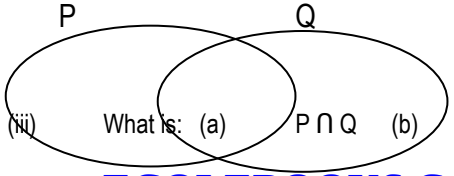
LESSON 3:
SUB TOPIC: REPRESENTING SETS ON VENN DIAGRAMS
CONTENT:
Example:
If P = {Factors of 24}
Q= {Multiples of 4 less than 25}
(i) List elements of : P = {1, 2, 3, 4, 5, 6, 8, 12, 24, }
Q = {4, 8, 12, 16, 20, 24}
(ii) Represent the above sets on a venn diagram below:



(iii) What is: (a) P ∩ Q (b) (P∪Q)

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EVALUATION ACTIVITY:

1. Given that set A = {Even numbers less than 15}
   B = {Composite numbers less than 15}
   (a) List down the members of the above sets.
   (b) Represent the above sets on a venn diagram
2. Given that ε = {whole numbers less than 15}
   Set P = {4, 6, 14, 8, 0, 12, 3, 7}
   Set Q = {1, 3, 5, 7, 9, 11, 13}
   Write down the numbers of PnQ
   Represent the above sets on a venn diagram

Remarks:

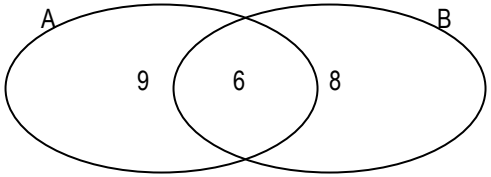
LESSON 4:

SUB TOPIC: NUMBER OF ELEMENTS ON VENN DIAGRAMS

CONTENT:

Example:

The diagram below shows the number of pupils who eat apples (A) and beans (B). Use it to answer questions that follow:



(i) How many pupils eat both apples and beans?
(ii) How many pupils eat beans n(B) = 6 + 8 = 14
(iii) How many pupils eat apples?
(iv) How many pupils eat only one type of food?
(v) Find the number of pupils in the whole class.

EVALUATION ACTIVITY:

A New MK Maths Revised Edition Bk 7 Pg 9 Exercise 1:6 and exercise 1:9 Pg 14

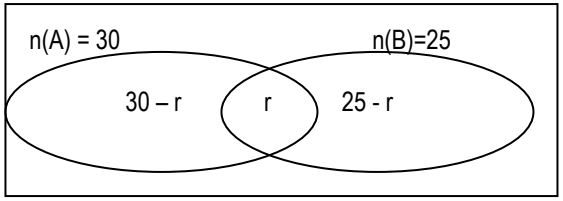
Remarks:

LESSON 5:

SUB TOPIC: SOLVING PROBLEMS USING VENN DIAGRAMS

CONTENT: Given that n(A) = 30, n(B) = 25 and n(AUB) = 45.

(a) Draw a venn diagram to show the above information.



(b) Find n(AnB)

Let the number in (AnB) be r.

30 – r + r + 25 – r = 45

30 + 25 + r – r – r = 45

55 – r = 45

55 – 55 – r = 45 – 55

- r = -10

- r = -10

- 1 - 1

R = 10

(ii) A only

Probability of elements in the intersection.

EVALUATION ACTIVITY:

A New MK Primary Maths ppls Bk 7 Pg 10 – 11 exercise 1:7

Remarks:

LESSON 6:

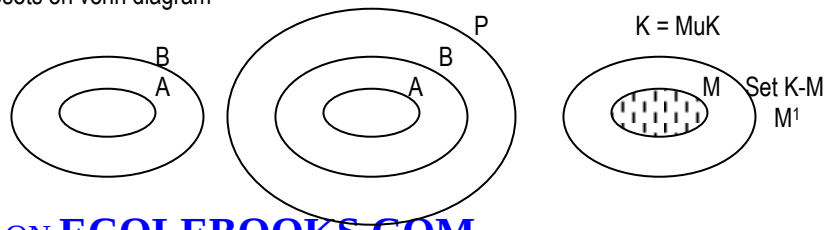
SUB TOPIC: SUBSETS

CONTENT:

Meaning of subsets

Symbol used on subsets

Subsets on venn diagram



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ACB Set M(MnK)M)

ACBCP

Formation of subsets:

If set x ={1, 2, 3} List all the subsets of set x.

{1}, {2}, {3}, {12}, {1,3}, {2,3}, {1,2,3}

List all the proper subsets of R where R = {-3<n<+1} where n is an integer.

Solution:

R = {-2, -1, 0}

Proper subsets: (}, {-2}, {-1}, {0}, {-2 -1}, {-2,0}, {-1, 0}

Calculation of the number of subsets.

Example: Find the number of set Q where Q = {4, 2, 9}

Number of subsets = n^2 where n = number of elements in a set.

Number of subsets of set Q = $2^n = 2^3 = 2 \times 2 \times 2 = 8$

EVALUATION ACTIVITY:

(a) If n(K) = 2, find number of subsets of K.

(b) Given that a set has 64 subsets. Find the number of members in that set.

a) If M = {d, e} find the number of proper subsets ins et m.

b) If set p has 16 proper subsets. find the number of members in that set.

Remarks:

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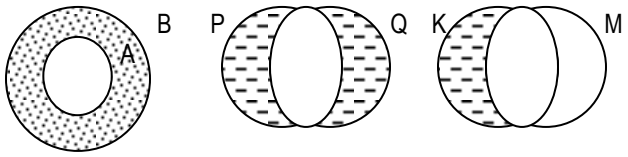
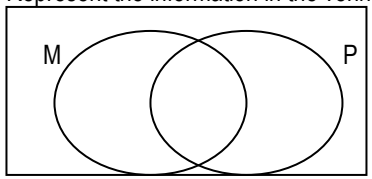
TOPICAL QUESTIONS ON SET CONCEPTS

1. Given that: Set P = {1, 2, 3, 4, 5, 6, 7}
   K = {0, 2, 4, 8, 9, 10}
   Find (i) PnK (ii) n(PUK)
   (iii) P – K
   (iv) K1 (v) (PnK)1
2. Draw a venn diagram to show that all dogs (D) are animals (A)
3. Given that Set A = {all prime numbers less than 20} B = {all factors of 16}
4. (a) Describe the shaded regions for the following venn diagrams.



(b) Given that a set has 32 subsets. How many elements has it?

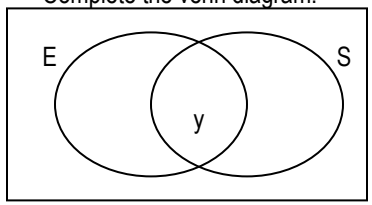
5. In a class of 30 pupils, 10 pupils like History (H) 14 like Geography (G) and 12 do not like either of the subjects.
   (i) Draw a venn diagram to represent this information.
   (ii) How many pupils like both subjects?
   (iii) How many pupils like History?
   (iv) How many pupils like one subject?
6. Seventy children were taken to a clinic for immunization,
   45 children were immunized against Measles (M)
   X children were immunized against Polio (P)
   6 children were immunized against measles and Polio.
   1 child was not immunized at all.
   (a) Represent the information in the venn diagram



$\xi = 70$

(b) Find the number of children who were immunized against Polio only.

7. In a class of 40 pupils, 25 like English (E), 15 like Science (S) Y pupils like both English and Science and 8 do not like any of the 2 subjects.
   (a) Complete the venn diagram.



$\xi = 40$

(b) Find the value of y.

(c) What is the probability of picking a pupil who likes only one subject?

8. In a class of 20 pupils where two languages are spoken, 14 speak Luganda (L), 15 speak Kiswahili (K).
   (a) Draw a venn diagram and show the information given.
   (b) Find the number of pupils who speak both Luganda and Kiswahili.
   (c) Find the number of pupils who speak only one language.
9. Use the venn diagram below.

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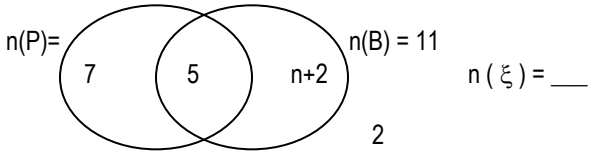

(a) Find the value of (i) h
(ii) Universal set
(iii) n(PnB)¹

10. In a class of 60 pupils, all enjoy eating beans, 33 enjoy eating meat (M), 35 enjoy eating fish (F), If P pupils enjoy all the three while 2 enjoy eating beans only.
(a) Represent the information on a venn diagram.
(b) Find the value of P.
(c) How many pupils enjoy only fish?

14. Given that Set X = {a, d, c, d} Find the number of:
(i) Sub sets
(ii) Proper subsets

TOPIC TWO:
TOPIC: **WHOLE NUMBERS**
LESSON 1:
SUB TOPIC: **FORMING NUMEARLS USING GIVEN DIGITS**
CONTENT: Using digits to form smallest and largest numbers.
Finding the sum of/difference between the smallest and largest numbers formed from the given digits.

Examples:

- Write down all 3-digit numerals that can be formed using the digits; 4, 6, 7
Solution: (i) 476 (ii) 764 (iii) 467 (iv) 647, etc
- Find the difference between the smallest and highest numerals formed.
Solution: Smallest = 467
Largest/biggest numeral – 764
Difference = 764
- 467
_____
297
_____

Example 2: Write down all 3 digit numerals formed using the digits 7,0,8.
EVALUATION ACTIVITY:
Exercise 2:1
Mathematics Revision Hand book for P.5 , P.6 and P.7 Pg 40
A New Mk Book 5 Pg
Remarks:

LESSON 15:

SUB TOPIC: **PROBABILITY**

CONTENT: Probability is a measure of the likelihood of an event.
Probability: Desired chance / Total chance
Example: A basket has 2 ripe mangoes and 6 row mangoes. What is the probability of Twaha picking a ripe mango at random?
Solution: Total number of events is picking whatever is in the basket, whether ripe or not. So the number of chances is raw + ripe. Then the desired chance are the ripe mango.

Probability: Desired chance / Total chance $= \frac{2}{2+6} = \frac{2 \div 2}{8 \div 2} = \frac{1}{4}$

What is the probability that a baby will be produced by a pregnant mother?

EVALUATION ACTIVITY:
A New MK Primary Maths Bk 7 Pg 189 exercise 10:23.
Primary Mathematics for Uganda Pg 57 exercise 1
Remarks:

LESSON 16:
SUB TOPIC: **TOSSING A COIN AND A DICE**
CONTENT:
Example:
If a coin is tossed once, what is the probability of getting a head on the top?
Total chance = {H, T}
Number of possible outcomes = 2

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Expected out comers = {H}
∴ Number of expected outcome = 1
Hence Probability = $\frac{n(E)}{n(s.s)}$
= ½

Example 2:
When a die is rolled once, what is the probability of getting an even number on top?
Probability space = {all expected out comes}
n(s.s) = {1, 2, 3, 4, 5, 6}
n(s.s) = 6
Expected outcomes = {all desired chances}
n(E) = {2, 4, 6}
N(E) = 3
Probability = $\frac{\text{All expected outcomes (desired chances)}}{\text{All possible outcomes.}}$
Probability = $\frac{n(E)}{n(s.s)}$
= $\frac{3}{6}$

EVALUATION ACTIVITY:
A New MK Primary Bk 7 Page 189 exercise 10:23
Remarks:

LESSON 17:
SUB TOPIC: CARTESIAN PRODUCTS AND PROBABILITY SPACE
CONTENT: Two coins, die and a coin
Example:
If two coins are tossed at once, what is the probability of two heads showing up?
Probability space =

1st	H	T	
2nd	H	HH	HT
Coin	T	TH	TT

n(s.s) = 4
Expected outcome = {H H}
n(E) = 1
Probability = $\frac{n(E)}{n(s.s)} = \frac{1}{4}$
Example II

What is the probability that an even number and a tail will show up?

	Coin	
Dice	H	T
1	1, H	T
2	2, H	2, T
3	3, H	3, T
4	4, H	4, T
5	5, H	5, T
6	6, H	6, T

n(E) = {2, T, 4, T, 6, T}
n(E) = 3

Probabilty space = 12
Probabilty of even and tail = $\frac{3}{12} = \frac{1}{4}$

EVALUATION ACTIVITY:
A New MK Primary Maths Bk 7 Pg 1891exercise 10:24
Primary Mathematics for Uganda Pg 57 exercise 1
Remarks:

LESSON 18:
SUB TOPIC: TOSSING TWO DIES (DIE AND DIE)
CONTENT:
Example:
1. When two dies are tossed once what is the probability that he sum is 8?

	DIEA					
Die B	1	2	3	4	5	6
1	1,1	1,2	1,3	1,4	1,5	1,6
2	2,1	2,2	2,3	2,4	2,5	2,6
3	3,1	3,2	3,3	3,4	3,5	3,6
4	4,1	4,2	4,3	4,4	4,5	4,6
5	5,1	5,2	5,3	5,4	5,5	5,6
6	6,1	6,2	6,3	6,4	6,5	6,6

Possible pairs (out come) = (2, 6, 3, 5, 4, 4, 5, 3, 6, 2}
N(E) = 5 pairs giving the sum

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Sample space = 36
Probability (sum 8) = n(E)
Prob space
= 5
36

2. When two dies are tossed once, what is the probability that the product of 20 appears on top?

EVALUATION ACTIVITY:
MK Bk 7 Pg 191 exercise 10:24
Remarks:

LESSON 2:
SUB TOPIC: PLACE VALUES OF DIGITS IN NUMERALS
CONTENT: The place value chart

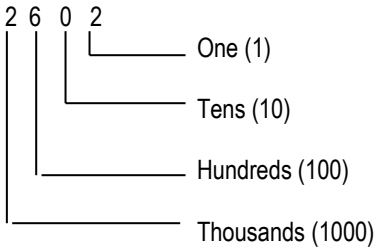
- Definition of place value.

Million			Thousands			Units		
H	T	O	H	T	O	H	T	O
2	4	1	0	6	3	1	2	2

- Identify the place value of each digit in the number above both in word and in figure.

Values:
- Meaning of value
- Finding values of digits in a given numeral.
- Operations on values of digits.

Example: Find the value of 6 in the number
2602



- Value of 6 = 6 x 100 = 600

EVALUATION ACTIVITY:
A New MK Primary Mathematics Book 6 (Old Edition)
Exercise 2:1 Pg 23
2:2 Pg 24

Remarks:

LESSON 3:
SUB TOPIC: READING AND WRITING VALUE IN WORDS TO (100 MILLION)
CONTENT: Writing in words
Examples:
(i) Write 20,480 in words.

Thousand	Units
20	480

Twenty thousand four hundred eighty.

(ii) 60,808,040

Million	Thousand	Units
60	808	040

Sixty million, eight hundred eight thousand forty.

EVALUATION ACTIVITY:

A New MK Primary Mathematic Bk 7 Exercise 2:2 Pg 22 (New Edition)

Remarks:

LESSON 4:
SUB TOPIC: READING AND WRITING NUMERALS IN FIGURES

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CONTENT: **Examples:**

Write in figures:

(i) Fifty seven million four hundred twenty one thousand nine hundred five.

Solution:

57 million = 57,000,000

421 thousand + 421,000

905 905

57,421,905

(ii) A quarter of a million

A million = 1,000,0000

¼ of 1,000,000

$\frac{1}{4}$ x 1,000,000

= 250,000

EVALUATION ACTIVITY:

A New MK Primary Mathematic Bk 7 Exercise 2:1 Pg 21 (New Edition)

Remarks:

LESSON 5:

SUB TOPIC: **EXPANDED NOTATION**

CONTENT: **Expanding numerals using:**

- **Place values**
- **Values**
- **Powers of ten/exponents**

Examples:

Expand: 5624 using:

Place values: **5624 =(5 x 1000) + (6 x 100) + (2 x 10) + (4 x 1)**

Values: **5624 = 5000 + 600 + 20 + 4**

Powers: **5624 = (5 x 10^3) + (6 x 10^2) + (2 x 10^1) + (4 x 10^0)**

10^3	10^2	10^1	10^0
5	6	2	4

EVALUATION ACTIVITY:

A New MK Primary Mathematic Bk 6 Pg 37 Exercise 2:4

Mathematics Revision Hand book P.5 – P.7 Pg 27

Remarks:

LESSON 6:

SUB TOPIC: **FINDING THE EXPANDED NUMBERS (SHORT FORM)**

CONTENT: **Examples:**

Write as a single number.

(i) (6 x 10,000 + (4 x 10) + (5 x 1)

Solution:

(6 x 10000) + (4 x 100) + (5 x 1)

= 60,000 + 400 + 5

= 60000

400

\+ 5

60405

(ii) 9000000 + 700 00 + 50000 + 1000 + 30 + 8

= 9 000 000

700 000

50 000

1 000

30

8

9 750 038

(iii) (2 x 10^5) + (4 x 10^3) + (6 x 10^0) + (7 x 10^2)

= (2 x 10 x 10 x 10 x 10 x 10) + (4 x 10 x 10 x 10) + (6 x 1) + (7 x 10 x 10)

= 200,000 + 4000 + 6 + 700

= 200 000

4000

700

6

204706

EVALUATION ACTIVITY:

A New MK Primary Mathematic Bk 6 Pg 37 Exercises 2:5 (Old Edition) Pg 58

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Remarks:

LESSON 7:
SUB TOPIC: STANDARD FORM/SCIENTIFIC NOTATION
CONTENT: Writing whole numbers in Scientific notation
Examples:
(i) Write 453 in standard form
x 100
4.53 x 10 x 10
4.53 x 10^2
(ii) Express 650000 in Scientific notation.
650,000 = 6.5 x 100,000
= 6.5 x 10 x 10 x 10 x 10 x 10
= 6.5 x 10^5
Finding numbers expressed in standard form.
EVALUATION ACTIVITY:
A New MK Primary Mathematic Bk 6 Pg 60 (Old Edition)
Macmillan Primary Mathematics Bk 7 Pg 56 Exercise 10 Pg 58 Exercise 11

LESSON 8:
SUB TOPIC: ROUNDING OFF WHOLE NUMBERS
CONTENT: Examples:
Review – rounding off scale
Round off the following as instructed.
(i) 3864 to the nearest hundred.

H	-	R	P	V
3	8	~~6~~	~~4~~	
+		1		
3	9	0	0	

(ii) 214 (nearest tens

Tens - RPV

2	1	4
+		0

2 1 0

EVALUATION ACTIVITY:
A New MK Pupils Bk 6 Pg 161 Exercise 18:1
Macmillan Primary Mathematics Bk 7 Exercise 6 Pg 23
Remarks:

LESSON 9:
SUB TOPIC: ROMAN NUMERALS; CONVERTING HINDU ARABIC NUMEARLS TO ROMAN NUMBERSL
CONTENT:
Revise basic Roman symbols (IXLCDM)
Example
1. What 124 in Roman numerals

H	T	O
1	2	4
100	20	4

100 + 20 + 4
100 = C
20 = XX
4 = IV
= CXXIV

ii) 1962
1000+900+ 60 +2
1000 = M
900 = CM
60 = LX
2 = II
= MCMLXII

(iii) 6000
(iv) 7000

EVALUATION ACTIVITY:
Macmillan Pri MTC pupils bk 7 pg 16 exercise 1
A New MK Primary Mathematic Bk 7 pg 23
Remarks:

LESSON 10:
SUB TOPIC: ROMAN NUMERALS (CONVERSION OF ROMAN NUMERALS TO HINDU ARABIC)
CONTENT: Example
Write the following numbers in Hindu Arabic numerals
(i) MXLV
M + XL + V
M – 1000

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XL – 40
V – 5

MXLV = 1045

(ii) CD XCiv
CD + XC + iv
CD – 400
XC – 90
Iv – 4

CDXCIV = 494

(iii) A temple had MDCCLXIV written on top of it showing the year it was built. Which year is this in Hindu Arabic

EVALUATION ACTIVITY:
A New MK Primary Maths Pupils Bk 7 Pg 24 Exercise 2:6
Macmillan Primary Maths Pupils' Bk 7 Pg 16 exercise 1.

LESSON 11:
SUB TOPIC: OPERATION ON ROMAN NUMERALS
CONTENT: Example

(I) Add CCXLIII + DCLXXV (answer in Roman numerals)

Solution:
CCXLIII – Hindu Arabic
CC + XL + III
CC - 200
XL - 40
III - 3
243
DCLXXV
DC + LXX + V
600 + 70 + 5
675

243 + 675 = 918

918 – Roman numerals
900 + 10 + 8
900 = CM
10 = X
8 = VIII

918 = CMXVIII

Find the difference between MMCMLX and MCDXL answer in Hindu Arabic numerals.

EVALUATION ACTIVITY:
Teacher designs his or her own suitable activity.

Remarks:

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LESSON 12:
SUB TOPIC: BASES (CHNAGING FROM DECIMAL BASES TO NON-DECIMAL BASES)
CONTENT:
Review the following:
- Name of bases and digits used.
- Place values of bases.

Example:
Change 25 to base seven
Solution:

7	25	rem 4
7	3	rem 3
	-	

25 = 34 seven

What base eight numeral is equal to 54 ten?
Express 83 nine to nonary base.

EVALUATION ACTIVITY:
A New MK Primary Maths Pupils' Bk 6 Pg 39 exercise 5:8

Remarks:

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LESSON 13:
SUB TOPIC: BASES (CHANGING FROM NON DECIMAL BASES TO DECIMAL BASES)

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CONTENT:
Example:
(i) Change 234 six to base ten
Solution:

2 3 4
Ones (6^0)
Sixes (6^1)
Six sixes (6^2)

$(2 \times 6^2) + (3 \times 6^1) + (4 \times 6^0)$
$(2 \times 6 \times 6) + (3 \times 6) + (4 \times 1)$
12 x 6) + 18 + 4
72 + 22
94 ten

EVALUATION ACTIVITY:
A New MK Primary Maths Pupils' Bk 6 Pg 40 exercise 5:10
Remarks:

LESSON 14:
SUB TOPIC: BASES (CHANGING FROM NON DECIMAL BASES TO NON DECIMAL BASES)
CONTENT:
Example:
(i) Change 123 five to base six
Solution:
123_{five} base ten
123
One (5^0)
Fives (5^1)
Five fives (5^2)

$(1 \times 52) + (2 \times 51) + (3 \times 50)$
$(1 \times 5 \times 5) + (2 \times 5) + (3 \times 1)$
$(5 \times 5) + 10 + 3$
25 + 10 + 3
35 + 3

38_{ten}
38 ten to base six

6	38	rem 2
6	6	rem 0
6	1	rem 1
	0	

102_{six}
123 five = 102 six

(ii) 2t eleven to base nine
EVALUATION ACTIVITY:
A New MK Primary Maths Pupils' Bk 6 Pg 39 exercise 5:8
Remarks:

LESSON 15:
SUB TOPIC: BASES (OPERATION ON BASES – ADDITION)
CONTENT:
Example:

225_{six}
$+434_{six}$
1103_{six}

9 ÷ 6 = 1 r 3
6 ÷6 = 1 r 0
7 ÷ 6 = 1 r 1

143_{five} + 11 $_{five}$ (answer in base ten)
23_{seven} + 12 $_{six}$ (answer in base five)

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils' Bk 7 Pg 38 exercise 3:2

Remarks:

LESSON 16:
SUB TOPIC: BASES (SUBTRACTION OF BASES)
CONTENT: Examples:
(I) 671nine – 285nine

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Solution:
5 6^{15} 10
^{5} ~~6~~ ^{7}~~6~~ ^{1}~~1~~ nine 9 + 1 = 10
- 2 8 5 nine 9 + 6 = 15

3 7 5 nine

(II) 345 six – 234 six (answer in base six)

EVALUATION ACTIVITY:
A New MK Old Edition Pupils Bk 7 Pg 39 exercise 3:3
Remarks:

LESSON 17:
SUB TOPIC: MULITPLICATION OF BASES
CONTENT: Example:

(i) 1 2 1 three 1 x 2 = 2
X 2 three 2 x 2 = 4
4 ÷ 3 = 1 rem 1
1012 three 1 x 2 = 2 + 1
3 ÷ 3 = 1 rem o

3 3
(ii) 345 six 5 x 2 = 20
X 14 six 20 ÷ 6 = 3rem2
4 x 4 = 16 + 3
2^{1} 3^{1} 12 10 ÷ 6 = 3rem 1
3 4 5 3 x 4 = 12 + 3
15 ÷ 6 = 2 rem3
10202 six

EVALUATION ACTIVITY:
Exercise 2:1

A New MK Primary Maths Pupils' Bk 7 Pg 40 exercise 3:4

Remarks:

LESSON18:
SUB TOPIC: DIVISION OF BASES
CONTENT:
Examples:
(i) 204 five ÷ 14 five.
Solution:
204 five – base ten
(2 x 52) + (0 x 51) + (4 x 50)
(2 x 5 x 5) + (0 x 5) + (4 x 1) + (10 x 5) + 0 + 4
50 + 4
54 ten

14 five
(1 x 51) + (4 x 50)
(1 x 5) + (4 x 1)
5 + 4
= 9 ten
5 ÷ 9 ten
6 ten

6ten – base five

5	6	rem 1
5	1	rem 1
	0	

11 five
(ii) 448 nine ÷ 17 nine (answer in Septenary base)

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EVALUATION ACTIVITY:

A New MK Old Edition Pupils Bk 7 Pg 41 - 42 exercise 3:5

Remarks: First change to base ten then divide and convert to base five.

_____

_____

LESSON 19:
SUB TOPIC: **FINDING THE UNKNOWN BASE (MISSING BASE)**
CONTENT: Examples:

(i) If 44p = 35 nine
Solution:
$(4 \times p) + (4 \times p0) = (3 \times 9^1) + (5 \times 9^0)$
$(4 \times p) + (4 \times 1) = (3 \times 9) + (5 \times 1)$
$4p + 4 = 27 + 5$
$4p + 4 = 32$
$4p + 4 - 4 = 32 - 4$
$4p + 0 = 28$
$\frac{4p}{4} = \frac{28}{4}$
$P = 7$

(ii) 72x = 71 nine

(iii) 325 six = q3

EVALUATION ACTIVITY:
A New MK Old Edition Pupils Bk 7 Pg 43 exercise 3:7

Remarks:

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TOPIC 3:

TOPIC: **OPERATION ON NUMBERS**
LESSON 1:
SUB TOPIC: **ADDITION OF LARGE NUMBERS**
CONTENT: Examples:
Add correctly:
(i) 615 146 144
+ 320 005 614

935 151 758

(ii) The population in four countries of a district shows that county A is 23,467, county B is 21 602, county C is 19466 and county D is 25 102. What is the total population in the district?

County A	23467
County B	21602
County C	19466
County D	25012
	_____
	89 547
	_____

Emphasis on place value arrangement and re-grouping.

EVALUATION ACTIVITY:
A New MK Bk 7 exercise 3:1 Pg 45
Primary School Mathematics Bo 7 exercise 2 Pg 11.

Remarks:

_____

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LESSON 2:
SUB TOPIC: **SUBTRACTION OF LARGE NUMBERS**
CONTENT: Examples:
Subtract correctly:
(i) 596 148 320
- 239 610 510

_____
356 537 810
_____

(ii) What is the difference between 3060 and 186?
3 0 6 0
- 186

_____
2874
_____

(iii) Emphasis on place value arrangement and regrouping.

EVALUATION ACTIVITY:

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A New MK Bk 7 exercise 3:1 Pg 45
Primary School Mathematics Bk 7 exercise 2 Pg 11.

Remarks:

LESSON 3:
SUB TOPIC: **MULTIPLICATION OF LARGE NUMBERS**

CONTENT: Examples: Multiply:

(i) 214 032 x 1324

214032
X 1324

(ii) A store can hold 1973 boxes each containing 34 pairs of shoes. How many pairs of shoes are in the store?

1973
X 34

EVALUATION ACTIVITY:

New MK Bk 7 exercise 3:2 Pg 46
Remarks:

LESSON 4:
SUB TOPIC: **DIVISION OF LARGE NUMBERS**
CONTENT: Examples:

(i) Divide 3816648 by 132

```
        18914
132 | 3 8 1 6 6 4 8
      -264
       1176
      -1056
        1206
       -1188
          184
       - 132
          528
         -528

= 28914
```

(ii) There are 6315 books to be packed in 15 boxes. How many books should be packed in each box?

```
        421
15 | 6315
     60
      31
    - 30
       15
      -15
```

EVALUATION ACTIVITY:
A New MK Bk 7 exercise 3:2 Pg 46
Remarks:

LESSON 5:
SUB TOPIC: **DISTRIBIUTIVE PROPERTY**
CONTENT: Examples:
Use the distributive property to work out:

(i) (379 x 27) + (27 x 21)
Re-arrange(27 x 379) + (27 x 21)
= 27 x (379 + 21)
= 27 x (400)
= 27 x 400
= 10800

(ii) (137 x 42) – (37 x 42)
(137 x 42) – (37 x 42)
= (42 x 137) – (42 x 37)
= 42 x (137 – 37)
= 42 x 100
= 4200

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ASSOCIATIVE PROPERTY

Example

Use the associative property to workout

(5+8)+2=5+(8+2)=(5+2)+8) the alteration of the position of the brackets does not change the

13+2=5+10 = 7 +8 result

15 + 15 = 15

(5x8) x 2 =5x(8x2) = (5x2)+8) The alteration of the position of the brackets does not change the

40x2 = 5x16 = 10x8 result.

80 80 = 80

Conclusion : the associative property holds for both addition and multiplication.

Commutative property

Example

4+3 = 3+4 What you start with does not affect the result

7 7

4x3 = 3x4 (What you start with does not affect the result

12 = 12

Conclusion: The commutative property holds for both addition and multiplication

Given that t*y = ty+y

Find;

i) 2*3

ii) 5*7

EVALUATION ACTIVITY:

A new MK pri MTC bk 7 exercise 3:3 pg 47 (new edition)

A new MK Pri MTC teacher's bk 6 extra work to pupils pg 49

Remarks:

LESSON 6:

SUB TOPIC: **LAWS OF INDICES IN MULTIPLICATION AND DIVISION**

CONTENT: Examples:

(i) Evaluate: $4^2 \times 4^4$

Method 1: 42+4 using index rule

$= 4^6$

Method 2: Using expanded form $4^2 \times 4^4$

$= 4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4 \times 4$

$= 4^6$

(ii) Work out: 43 42

Method 1: Using the index rule.

43 42

= 4 3-2

= 41

= 4

Method 2: 43 42 = 4 x 4 x 4

4 x 4

$= \frac{4}{1}$ = 4

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 3:8 and 3:9 on Pg 51 & 52.

Remarks: Learners should be helped to prove that any number to power zero is 1.

LESSON 7:

SUB TOPIC: **APPLICATION OF INDICES**

CONTENT: Solving multiplication equations.

Finding missing indices by multiplication.

Examples: Solve:

(i) $2^x = 3^2$

Factorize 32 using 2.

2	32
2	16
2	4
2	2
	1

$2^x = 2 \times 2 \times 2 \times 2 \times 2$

$2^x = 2^5$

$\therefore X = 5$

(ii) $3^y \times 3 = 81$

Factorise 81 using 3.

3	81
3	27

$3^y \times 3^1 = 3 \times 3 \times 3 \times 3$

$3^y \times 3^1 = 3^4$

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3 | 9	$3^{y+1} = 3^4$
3 | 3	Y + 1 = 4
1	Y _ 1 = 4 – 1
	∴ Y = 3

(iii) 2t x 33 = 108
Factorize 108 using 2 and 3.

2 | 108	$2^t \times 3^3 = 2 \times 2 \times 3 \times 3 \times 3$
2 | 54	$2^t \times 3^3 = 2^2 \times 3^3$
3 | 27	$2^t \times 3^3 \div 3^3 = 2^2 \times 3^3 \div 3^3$
3 | 9	$2^t = 2^2$
3 | 3	t = 2
1	

EVALUATION ACTIVITY:

Mathematics Bk 7 exercise 3:10 Pg 53

Remarks:

LESSON 8:
SUB TOPIC: **APPLICATION OF INDICES**
CONTENT: Finding missing indices by division
Examples: Solve:
(i) $2^x \div 2^1 = 8$
Factorize 8 using 2.

2 | 8	$2^x \times 2^1 = 2 \times 2 \times 2$
2 | 4	$2^x \times 2^1 = 2^3$
2 | 2	$2^{x-1} = 23$
1	X – 1 = 3
	X – 1 + 1 = 3 + 1
	∴ X = 4

(ii) $4^{3x} \div 4^x = 256$

Factorise 256 using 4.

4 | 256	$4^{3x} \div 4^x = 4 \times 4 \times 4 \times 4 \times 4$
4 | 64	$4^{3x} \div 4^x = 4^4$
4 | 16	$4^{3x} – x = 4^4$
4 | 4	3x – x = 4
1	2x = 4
	$\frac{2x}{2} = \frac{4}{2}$
	∴ x = 2

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 3:11 Pg 54

Remarks:

LESSON 7:
SUB TOPIC: **SQUARE NUMBERS AND SQUARE ROOTS**
CONTENT:
Examples:
(i) Find the square of 4.
Square of 4 = 42 = 4 x 4 = 16
(ii) Find the square root of 4.

4 = 2 \| 4 ; 2 \| 2 = $\sqrt{2 \times 2}$ = 2

(iii) Find the square root of $7\ ^1/_9$
First change it to improper fraction: $\frac{(7 \times 9) + 1}{9}$

$\frac{63 + 3}{9} = \frac{64}{9}$

2 \| 64 ; 3 \| 9 Therefore $\frac{64}{} = \frac{8}{}$

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2	32
2	8
2	4
2	2
	1

3	3
	1

9 3

$= 2\ ^{2}/_{3}$

2 x 2 x 2 x 2 x 2 x 2 3 x 3
2 x 2 x 2 = 8 3

(iv) Find the square root of 0.36

EVALUATION ACTIVITY:

A New MK Pupils Bk 6 (Old Edition) Pg 90 – 92 exercise 9:23, 9:24, 9:25 & 9:26

Remarks:

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LESSON 8:
SUB TOPIC: CUBE ROOTS
CONTENT:
Example:
Find the cube root of 8.

$\sqrt[3]{8}$

2	8
2	4
2	2
	1

$\sqrt[3]{8} = 2 \times 2 \times 2 = 2$

Method 2:

$\sqrt[3]{8} = (2^3)^{1/3}$

$2^{(3 \times 1/3)} = 2^1 = 2$

EVALUATION ACTIVITY:
Teachers' collection
Mathematics Revision Hand Book for Primary 5, 6 & 7 Pg 60
Remarks:

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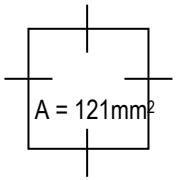
LESSON 9:
SUB TOPIC: APPLICATION OF SQUARE AND CUBIC NUMBERS
CONTENT:
Example:

(i) The area of a square is 121 mm^2. Find the length of each of its sides.
Sketch:



Area of a square = S^2
$S^2 = 121mm^2$

$\sqrt{S^2} = \sqrt{121mm^2}$

$\sqrt{S} \times S = \sqrt{11mm} \times 11mm$
S = 11mm

(ii) The volume of a cube is 64m^3. Find the length of one side.
Vol of a cube = L3 = 64m^3
3 L3 = 3 64m^3

2	64
2	32
2	16
2	8
2	4
2	2
	1

$64 = 2^6$
$= 2^6 \times 1/3$
$2^2 = 2 \times 2 = 4$

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Ecolebooks.com

L = 4m

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 6 Pg 102 exercise 4:43.

Remarks:

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TOPICAL EXERCISE:

1. Add: 426 + 1519 + 3
2. Subtract 105 from 200
3. Evaluate $3^x \div 3^2 = 27$
4. $5^3 \times 5^{-2} \div 5^1$
5. There were 32 apples in each box and 12 boxes in each carton. How many apples did Annet get if she bought 124 cartons?
6. What is the sum of 8456 litres of petrol and 45631 litres?
7. There were 38600 chicken on the teacher's farm. 12364 were sold on ldd day. How many remained?
8. At a party, 4848 people were served with sodas each. How many crates of soda were bought if each crate contains 24 bottles?
9. Work out (a) 2.5 x 13 + 2.5 x 7
   (b) 4.5 x 75 – 4.5 x 25
10. What number must be added to 54068 to give 60000?

TOPIC 4: PATTERNS AND SEQUENCES

LESSON 1:

SUB TOPIC: **DIVISIBILITY TESTS**

CONTENT: Divisibility tests of 2, 3, 4 and 5.

Divisibility for 2.

A Number is divisible by 2 if the digit in the one's place is 0, 2, 4, 6, or 8 eg 1460

Test for 3:

A number is divisible by 3 if the sum of its digits is divisible by 3 eg 741 = 7 + 4 + 1 = 12

Test for 4:

A number is divisible by 4 if the number formed by its last two digits is divisible by 4. eg 572. The last two digits are 7 and 2 therefore the number formed is 72 which is divisible by 4. Hence 572 is divisible by 4.

Test for five (5):

A number is divisible by 5 if the last digit in the ones place is either 0 or 5. eg 360 or 805.

EVALUATION ACTIVITY:

A New Edition MK Primary Maths Pupils BK 7 Pg 60 exercise 4:1

Remarks:

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LESSON 2:

SUB TOPIC: **DIVISIBILITY TESTS**

CONTENT: Divisibility tests for numbers 6 to 10.

Test for 6:

A number is divisible by 6 if it is divisible by 2 and 3. In other words a number is divisible by 6 if it is even and the sum of its digits is divisible by 3.

Example:

618 is divisible by 6 since it is an even number and the sum of its digits 6 + 1 + 8 = 15 is divisible by 3.

738 is divisible by 6 since it is an even number and the sum of its digits 7 + 3 + 8 = 18 is divisible by 3. Therefore 738 is divisible by 6.

Test for 7:

When the last digit of a number is doubled and the result is subtracted from the number formed by the remaining digits, the outcome is divisible by 7.

Example: Take the number 861. the last digit is 1 and the number formed by the remaining digits is 86, double 1 to give (1+1)= 2

Subtract 2 from 86 to give (86 – 2) = 84

84 is divisible by 7. Hence 861 is also divisible by 7.

Test for 8:

A number is divisible by 8 if the number formed by the last three digits is divisible by 8.

Example:

In the number 7960,760 is number formed by the last three digits. It is divisible by 8 therefore 7960 is divisible by 8.

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Test for 9:
A numbers is divisible by 9 if the sum of its digits is divisible by 9.
Example: 198 the sum of 198 is 1+9+8 = 18
18 is divisible by 9 therefore 198 is divisible by 9.

Test for 10:
A number is divisible by 10 if the digit in the ones place is 0 eg 70, 60, 120, 3010.
A number which is divisible by 10 is also divisible by 2 and 5.

Test for 11:
A number is divisible by 11 if the difference between the sum of the digits in even places and the sum of the digits in the odd place is zero (0) or divisible by 11.

eg Even position: 7 3 3 6 8 9

Odd position
Sum of the numbers in odd positions = 7 + 3 + 8 = 18
Sum of the numbers in even positions = 3+ 6 +9 = 18
Difference between sums = 18-18=0
Since the difference is 0, 733689 is divisible by 11.

EVALUATION ACTIVITY:

A New Edition MK Primary Maths Pupils BK 7 Pg 63 exercise 4:2

Remarks:

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LESSON 3:
SUB TOPIC: WHOLE, NATURAL, ODD, EVEN AND PRIME NUMBERS
CONTENT: Definition of:

(i) Whole numbers:
All positive numbers with zero (0) inclusive form a set of whole numbers
eg 0, 1, 2, 3, 4, 5, 6, 7, 8, 9,……

(ii) Natural numbers:
Natural numbers are counting numbers. The first natural number is 1
eg 1, 2, 3, 4, 5, 6, 7, 8, 9, …..

(iii) Odd numbers:
Any number which I not exactly divisible by 2 i.e. leaves one as a remainder.
eg 1, 3, 5, 7, 9, …..

(iv) Even numbers:
Any number which is exactly divisible by 2. The first even number is 0
eg 0, 2, 4, 6, 8,

(v) Prime numbers:
Numbers with only two factors. One and itself. The first prime number is 2. 2 is the only even/prime number.
eg 2, 3, 5, 7, ….

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 4:5 Pg 68

Remarks:

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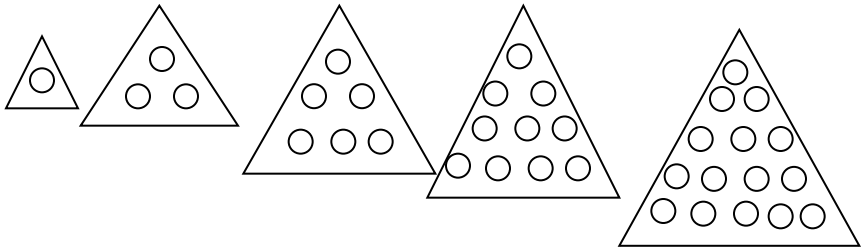
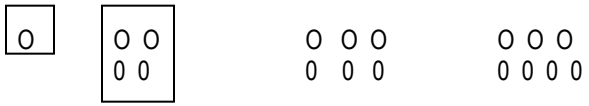
LESSON 4:
SUB TOPIC: COMPOSITE, TRIANGULAR, SQUARE, CUBE NUMBERS
CONTENT: Definition of:

(i) Composite numbers:
Numbers with more than two factors. Eg 4, 6, 8, 9 , 10, 12,……

(ii) Triangular numbers:
Numbers got by adding consecutive counting numbers eg 1, 3, 6, 10, ….



(iii) Square numbers obtained by multiplying itself once.
Numbers got by adding consecutive odd numbers starting from 1.



1x1=2
2x2=4
3x3=9
4x4=16
5x5=25

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0 0 0 0 0 0 0 0 0

1 1 + 3 1 + 3 + 5 1 + 3 + 5 + 7
1 4 9 16

(iv) Cube numbers:
Numbers got by multiplying a number by itself twice.
Eg 1 x 1 x 1 = $1^3 - 1$
2 x 2 x 2 = $2^3 = 8$
3 x 3 x 3 = $3^3 = 27$
4 x 4 x 4 = $4^3 = 64$
5 x 5 x 5 = $5^3 = 125$

(v)

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 4:3 Pg 65

Remarks:

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LESSON 5:
SUB TOPIC: **MULTIPLES, FACTORS**
CONTENT: Definition of:

(i) Multiples:
These are numbers which are obtained by multiplying a number by consecutive counting numbers ie. 1 x 2 x 3 , etc

Examples:

(i) M6 = {6 x 1, 6 x 2, 6 x 3, 6 x 4, 6 x 5, 6 x 6, 6 x 7……}
6 12 18 24 30 36 42

(ii) M8 = {8 x 1, 8 x 2, 8 x 3, 8 x 4, 8 x 5, 8 x 6, 8 x 7 ….}
8 16 24 32 40 48 56

(ii) M9 = {9 x 1, 9 x 2, 9 x 3, 9 x 4, 9 x 5, 9 x 6, 9 x 7…..}
9 18 27 36 45 54 63

(ii) Factors:

Any one of a pair of numbers which when multiplied gives the same multiple is called a Factor.

List examples:

All factors of 6
6 ÷ 1 = 6 1 x 6 = 6
6 ÷ 2 = 3 2 x 3 = 6
6 ÷ 3 = 2 $F_6 = \{1, 2, 3, 6\}$
6 ÷ 6 = 1
$F_6 = 1, 2, 3, 6$
Note F6 means factors of 6.

Find factors of 9.
1 x 9 = 9
3 x 3 = 9
$F_9 = \{1, 3, 9\}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 4:7 Pg 81

Remarks:

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LESSON 6:

SUB TOPIC: **L.C.M AND H.C.F**
CONTENT:
Examples:
(i) Find the LCM of 24, 36 and 40.

2	24	36	40
2	12	18	20
2	6	9	10
3	3	9	5
3	1	3	5
5	1	1	5
	1	1	1

= 2 x 2 x 2 x 3 x 3 x 5
= 4 x 6 x 15

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= 4 x 90
= 360

(ii) Find the HCF of 6, 8 and 12.

2	6	8	12
	3	4	6

= 2

EVALUATION ACTIVITY:

Mathematics Revision Hand Book for Primary 5 – 7 exercise 4:1 Pg 62
A New MK Primary Six Mathematics

Remarks:

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LESSON 7:
SUB TOPIC: APPLICATION OF LCM AND GCF
CONTENT:
Examples:
(i) Find the least number which is exactly divisible by 6, 8 and 12.
(ii) What is the smallest number of sweets that can be shared by 3, 4 or 6 pupils leaving 5 sweets as a reminder?
(iii) Two bells are used in Sir Apollo at intervals of 30 minutes and 40 minutes respectively. They are first rung together at 8:45 am, when will the two bells ring together again?
(iv) The product of two numbers is 240. One of them is 60, work out their:
(a) LCM
(b) GCF
(v) The LCM of x and y is 48 and HCF is 4. If x 16 find y.

EVALUATION ACTIVITY:

MK Primary Mathematics Bk 6 exercise 9:20 Pg 85 (Old Edition)
Oxford Primary Mathematics Bk 6 Pg 35

Remarks:

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LESSON 8:

SUB TOPIC: APPLICATIO N OF NUMBER PATTERNS; NATURAL, ODD AND EVEN NUMBERS

CONTENT: Examples:
The sum of three consecutive counting numbers is 18. Find the numbers.
Solution: Let the first number be r.

1st No.	2nd No.	3rd No	Sum
R	R + 1	R + 2	18

r+ r + 1 + r + 2 = 18
r+ r + r + 1 + 2 = 18
3r + 3 = 18
3r + 3 – 3 = 18 – 3
3r = 15
3r = 15
3 3
R = 5

1st no. = r = 5
2nd No. = r + 1 but r = 5
5 + 1 = 6
3rd No. = r + 2
Where r = 5
5 + 2 = 7
The numbers are
5, 6, and 7

Example ii.
The sum of 3 consecutive odd numbers is 15. Find the numbers:
Solution:
Let the first number be y.

1st No.	2nd No.	3rd No	Total
Y	Y + 2	Y + 4	15

y + Y + 2 + y + 4 = 15
y + y + Y = 2 + 4 = 15
3y + 6 = 15
3y + 6 – 6 = 15 – 6
3y = 9

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$\frac{3y}{3} = \frac{9}{3}$

y = 3

1st No. y = 3
2nd No y + 2 = y
Where y = 3
3 + 2 = 5
3rd No. = y + 4
where y = 3 3 + 4 = 7
The numbers are 3, 5, and 7

Example 3:
The sum of 4 consecutive even numbers is 76. What are the numbers?

Example 4:
The sum of three consecutive integers is 84. Find them.

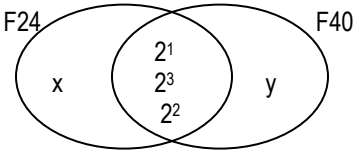
EVALUATION ACTIVITY:

A New MK Primary Bk 6 Pg 76 exercise 9:8 9Old Edition)

Remarks:

TOPICAL EXERCISE:

1. Find the sum of even numbers between 13 and 31.
2. List down all the composite numbers between 2 and 15.
3. Find the G.C.F of 8 and 12.
4. What is the Lowest Common Multiple of 6, 8 and 16?
5. Workout the square root of 961.
6. The sum of 3 consecutive natural numbers is 63. Find the numbers.
7. Find the next number in the sequence: 4, 7, 6, 9, 8, 11, …
8. What is the Smallest number which when divided by 9 and 11 leaves a remainder of 2?
9. Bulangiti buses leave for Kasese every 3 hours and Gateway buses leave for Soroti every four hours. Two buses set off from Kampala's bu park at 7:30am. When will the two buses leave together again?
10. The G.C.F of two numbers is 2 and their L.C.M is 24. If one of the numbers is 8, find the second number.
11. The sum of 3 consecutive even numbers is 36. Find their range.
12. Find the cube root of 64.
13. The area of a square garden is 169m2. Fin dits perimeter.
14. Find the square root of 0.81.
15. Find the area of a square flower garden whose one side is 0.16.
16. Use the venn diagram below to answer the questions about it.



(a) Find the value of x and y.
(b) Find the G.C.F and the L.C.M of 24 and 40.

TOPIC 5:

TOPIC: **FRACTIONS**
LESSON 1:
SUB TOPIC: **TYPES OF FRACTIONS**
CONTENT:
Proper – $^5/_7$
Improper – $^7/_5$
Mixed numbers – 2 ½
Expressing improper fractions as mixed numbers.
Examples: Express as mixed numbers:

1 $14/9 = 9 \overline{)14}$ = 1, 14 − 9 = 5

$\therefore \frac{14}{9} = 1\frac{5}{9}$

2 $211 = 14 \overline{)211}$ = 15, 211 − 14 = 71, 70, 1

$\therefore \frac{211}{14} = 15\frac{1}{14}$

Express as improper fractions:

1. $6\,^2/_3 = \frac{6 \times 3 + 2}{3}$

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$= \quad 18 + 2 = 20$
$\quad\quad 3 \quad\quad 3$
$\therefore 6\frac{2}{3} = \frac{20}{3}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 5:1 Pg 73

Remarks:

LESSON 2:

SUB TOPIC: **CHANGING FRACTIONS TO DECIMALS AND VISE VERSA**

CONTENT: Changing fractions to decimals and decimals to fractions

Examples:

- Changing fractions to decimals:

$\frac{5}{8} = 8\overline{)50}\ 0.625$ (- 48, 20, -16, 40, -40, -)

$\frac{5}{8} = 0.625$

2. $\frac{1}{3} = 3\overline{)10}\ 0.3333$ (- 9, 10, - 9, 10, - 9, 10, - 9, 1)

$\frac{1}{3} = 0.33....$

- Changing decimals to fractions:

(i) $0.25 = \frac{25}{100}$

$0.25 = \frac{1}{4}$

2. $0.125 = \frac{125}{1000}$

$0.125 = \frac{1}{8}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 5:20 Pg 88

Remarks:

LESSON 3:

SUB TOPIC: **CHANGING RECURRING DECIMALS TO RATIONAL NUMBERS AND VISE VERSA**

CONTENT: Changing recurring decimals to rational numbers and rational numbers to recurring decimals.

Examples:

- Changing recurring decimals to rational numbers:

1. 0.33……
Let the No. be y
Y = 0.33……
10 x y = 0.33… x 10
10y = 3.33…
10y = 3.33….
- y – 0.33…
$\frac{9y}{9} = \frac{3}{9}$
$Y = \frac{1}{3}$

2. 0.45…..
Let the No. be t
t = 0.45…..
100 x t = 0.45… x 100
100t = 45.45…
- t - 0.45…
99t = 45
$\frac{99t}{99} = \frac{45}{99}$
$y = \frac{5}{11}$

3. 0.1666…..
Let the No be a
a = 0.1666…
10 x a = 0.1666…
10a = 1.666…..
100 x a = 0.166…. x 1000
100 a = 16.666…
100a = 16.666….
-10a = -1.666….
90a = 15
$\frac{90a}{90} = \frac{15}{90}$
$a = \frac{1}{6}$

EVALUATION ACTIVITY:

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A New MK Primary Mathematics Bk 7 exercise 5:22 Pg 91

Remarks:

LESSON 4:
SUB TOPIC: **CHANGING RATIONAL NUMBERS TO DECIMALS**
CONTENT: Changing rational numbers to decimals
Examples:

1. $\frac{3}{11}$

$$\begin{array}{r} 0.2727 \\ 11\overline{)30} \\ \underline{22} \\ 80 \\ \underline{-77} \\ 30 \\ \underline{-22} \\ 80 \\ \underline{-77} \\ 2 \end{array}$$

$\frac{3}{11} = 0.2727\ldots$

2. $\frac{1}{12} =$

$$\begin{array}{r} 0.08333 \\ 12\overline{)100} \\ \underline{-96} \\ 40 \\ \underline{-36} \\ 40 \\ \underline{-36} \\ 40 \\ \underline{-36} \\ 4 \end{array}$$

$\frac{1}{12} = 0.833\ldots.$

EVALUATION ACTIVITY:
Macmillan Primary Mathematics Bk 7 exercise 1 Pg 81.
Remarks:

LESSON 5:
SUB TOPIC: **OPERATIONS OF FRACTIONS**
CONTENT: Addition and subtraction
Examples:

1. $\frac{1}{3} + \frac{1}{2} = \frac{2+3}{6}$
$= \frac{5}{6}$

2. $1\frac{3}{4} + 1\frac{5}{6}$
$\frac{7}{4} + \frac{11}{6}$
$\frac{21+22}{12} = \frac{43}{12} = 3\ ^{7}/_{12}$

Subtract:

1. $\frac{3}{4} - \frac{1}{3}$
$= \frac{9-4}{12}$

2 $3\frac{5}{6} - 1\frac{4}{5}$
$= \frac{23}{6} - \frac{9}{5}$
$= \frac{5}{12}$

$= \frac{115-54}{30}$
$\frac{61}{30}$
$= 2\ ^{1}/_{30}$

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exrcises 5:2 and 5:3 Pg s73/74
Remarks:

LESSON 6:
SUB TOPIC: **OPERATION ON FRACTIONS**
CONTENT: Multiplication of fractions
Examples:

1. $^{1}/_{5} \times 3$
$= \frac{3}{5}$

2. $^{1}/_{3} \times ^{3}/_{4}$
$= \frac{1}{3} \times \frac{3}{4} = \frac{1}{4}$
$\frac{1}{4}$

2. $2\ ^{1}/_{4} \times 1\ ^{1}/_{5}$
$\frac{9}{4} \times \frac{6}{5} = \frac{27}{10}$
$= 2\ ^{7}/_{10}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercises 5:4 and 5:5 Pgs 75/76

Remarks:

LESSON 7:

SUB TOPIC: **OPERATION ON FRACTIONS**

CONTENT: Division of fractions
Examples:

1. $^{2}/_{5} \div 2$
$= \underline{2} \times ½$

2. $^{3}/_{4} \div ½$
$= 3 \times \underline{1}$ LCM = 4

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$\frac{5}{\frac{1}{5}}$

$(\frac{4}{3} \times 4) \div (\frac{2}{1} \times 4)$

$3 \div 2 = \frac{3}{12}$

$= 1\frac{1}{2}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercises 5:9 and 5:5 Pg 80

Remarks:

LESSON 8:

SUB TOPIC: **USE OF BODMAS TO SIMPLIFY MIXED FRACTION**

CONTENT: Combined operations

Brackets
Of
Division
Multiplication
Addition
Subtraction
Examples:

1. $\frac{2}{3}$ of $\frac{3}{4} - \frac{1}{3}$

$\frac{2}{3} \times \frac{3}{4} - \frac{1}{3}$

$\frac{1}{2} - \frac{1}{3}$

$\frac{3-2}{6}$

$= \frac{1}{6}$

2. $\frac{5}{6} - \frac{3}{4}$ 1 1/2

$\frac{5}{6} - \frac{3}{4} \div \frac{3}{2}$

$\frac{5}{6} - \frac{3}{4} \times \frac{2}{3}$

$\frac{5}{6} - \frac{1}{2} = \frac{5-3}{6}$

$= \frac{2}{6} = \frac{1}{3}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercises 14:11 Pg 127 (Old Edition)

Remarks:

LESSON 9:
SUB TOPIC: **APPLICATION OF FRACTIONS IN REAL LIFE SITUATION**
CONTENT: Word problems
Examples:

(i) A boy had a jerry can full of water. He used 13/20. What fraction remained?

$1 - \frac{13}{20} = \frac{20}{20} - \frac{13}{20} = \frac{7}{20}$

(ii) A, B and C contributed to start a Company. A paid 3/10 of the cost and B contributed 5/10 of the cost.
(a) What fraction did C contribute?
(b) If C contributed shs 30,000 what was their total contribution?

(iii) John spent 1/3 of his money on books and 1/6 of the remainder on transport.
(a) What fraction of his money was left?
(b) If he was left with shs 15,000, how much did he have at first?

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exercises 5:6 and 5:7 and 5:5 Pgs 74 - 78
Remarks:

LESSON 10:
SUB TOPIC: **APPLICATION OF FRACTIONS**
CONTENT: Word problems
Examples:

1. Tap A can fill the tank in 6 minutes and tap B can fill the same tank in 3 minutes. How long will both taps take to fill the tank if they are opened at the same time?
Method 1:
Tap A Tap B
1/6 1/3
Tap A and B = $\frac{1}{6} + \frac{1}{3} = \frac{1+2}{6} = \frac{3}{6} = \frac{1}{2}$
In 1 minute the tank will be 1 ½ = 1 x 2
1 = 2 minutes.
i.e ½ (1 part is filled in 1 minute
²/₂ (2 parts are filled in 2 minutes.

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Method 2: Product
Time taken by Sum
The two taps

$= \frac{\text{Tap A x tap B}}{\text{Tap A + tap B}}$

$= \frac{6 \times 3}{6 + 3}$

$= \frac{18}{9}$

2minutes

EVALUATION ACTIVITY:
MK Bk 7 Pg 79 exercise 4:8
Remarks:

LESSON 11:
SUB TOPIC: APPLICATION OF FRACTIONS
CONTENT: Word problems
Examples:

1. Twaha spent 1/3 of his money on books and 1/6 of the remainder on transport.

(i) What fraction of his money was left?
Fraction spent on books 1/3
Remained fraction: $1 - {}^{1}/_{3} = \frac{3}{3} - \frac{1}{3} = \frac{2}{3}$
Fraction spent on transport: $\frac{1}{6}$ of $\frac{2}{3} = \frac{1}{6} \times \frac{2}{3}$
$= \frac{1}{9}$
Total fraction spent on transport and books: $1 + 1$
$\frac{3}{9}$
$\frac{3+1}{9} = \frac{4}{9}$
Remained fraction $= 1 - \frac{4}{9} = \frac{9}{9} - \frac{4}{9} = \frac{5}{9}$

(ii) If he was left with shs 15,000= how much did he have at first?
Let the total be y.
$\frac{5}{9}$ of y = 15,000=
$\frac{5}{9} \times y$ = 15,000=
9
$\frac{5y}{9}$ = 15,000
$\frac{5y}{9} \times \frac{9}{5} = 15000 \times \frac{9}{5}$
Y = 3000 x 9
= shs 27,000=
He had shs 27,000 at first

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exercise 5:7 Pg 78
Remarks:

LESSON 11:
SUB TOPIC: DECIMAL (PLACE VALUES AND VALUES)
Content: place value chart for decimals

TH	H	T	O	T^{th}	H^{th}	TH^{th}
4	3	7	8	2	5	9

Place values are:
4 Thousand (1000)
3 Hundreds (100s)
7 Tens (10s)
8 Ones (1s)
2 Tenths (1/10)
5 Hundredths (1/100)
9 Thousandths (1/1000)
Values of digits
Value of 7 = 7 x 10
= 70
Value of 2 = $2 \times \frac{1}{10}$
$\frac{2}{10}$
= 0.2
Operation on values of digits in decimals
Evaluation

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A new MK pri mtc bk 6
Mtc revision hand bk 5 – p.7 pg25

LESSON 12:
SUB TOPIC: reading and writing decimals in words
CONTENT:
Examples:
Write the following decimals in words
232.76

H	T	O	T^{th}	H^{th}
2	3	2	.7	6

Twenty three and two hundred seventy six thousand
378.01

H	T	O	T^{th}	H^{th}
3	7	8	.0	1

Three hundred seventy eight and one hundredths
Writing decimals in figures
Thirty six and seventeen hundredths
Thirty six 36
Seventeen hundredths = $\frac{17}{100}$ 0.17

36 + 0.17
36.017

36.00
+0.17
36.17

LESSON 13:
SUB TOPIC: EXPANDING DECIMALS USING VALUES AND POWERS/EXPONENTS OF 10
CONTENT: Expand 486.5729 using:
(a) Values:
$(4 \times 100) + (8 \times 10) + (6 \times 1) + \left(5 \times \frac{1}{10}\right) + \left(7 \times \frac{1}{100}\right) + \left(2 \times \frac{1}{1000}\right) + \left(9 \times \frac{1}{10000}\right)$

$400 + 80 + 6 + {}^{5}/_{10} + {}^{7}/_{100} + {}^{2}/_{1000} + {}^{9}/_{10,000}$

$486.5129 = 400 + 80 + 6 + 0.5 + 007 + 0.002 + 0.0009$

b)

10^2	10^1	10^0	10^{-1}	10^{-2}	10^{-3}	10^{-4}
4	8	6	5	7	2	9

$(4 \times 10^2) + (8 \times 10^1) + (6 \times 10^0) + (5 \times {}^{-1}) + (1 \times 10^{-2}) + (2 \times 10^{-3}) + (9 \times 10^{-4})$
EVALUATION ACTIVITY:
A New MK Primary Mathematic Pupils Bk 7 Pg 90 Exercise 7:11.
Remarks:

LESSON 14:
SUB TOPIC: WRITING DECIMALS IN SHORT FORM

CONTENT: Find the number expanded:
(i) 600 + 70 + 8 + 0.2 + 0.003
Solution: 600.000
70.000
8.000
0.200
+ 0.003
6 7 8.203

(ii) $(5 \times 10^3) + (7 \times 10^2) + (3 \times 10^1) + (4 \times 10^0) + (9 \times {}^{1}/_{10}1) + (6 \times {}^{1}/_{10^2})$
Solution:
(5 x 1000) + (7 x 100) (3 x 10) + (4 x 1) + (9 x 0.1) + (6 x 0.01)
(5000 + 700 + 30 + 4 x 0.9 + 0.06)
5734.96

EVALUATION ACTIVITY:
A New MK Primary Mathematics Pupils Bk 7 (Old Edition) Pg 92 Exercise 7:12.
Remarks:

LESSON 14:
SUB TOPIC: WRITING DECIMALS IN SCIENTIFIC FORM OR STANDARD NOTATION

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CONTENT:
Express the following decimals in standard notation/Scientific form.
Example:
(i) 365.72
3.6572×10^2

(ii) 0.67
6.7×10^{-1}

(iii) 0.00098
9.8×10^{-4}

Finding decimals expressed in Scientific notation.

EVALUATION ACTIVITY:
1. Express the following in standard notation/Scientific form
2. Find the decimal number expressed in standard form.
   (a) 2.34 x 10-2
   (b) 6.1 x 10-2

Ref: MTC Revision Hand Book P.6, 6, P.7 Pg 29

Remarks:

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LESSON 16:
SUB TOPIC: ROUNDING OFF DECIMALS
CONTENT:
Example:
Round off the following decimals as instructed:
4.78516 to the nearest thousandths.
Solution:

0	Tth	Hth	THth	Hth
4 .	7	8	5	6
				+0
4.	7	8	5	0 0

4.78516 to the nearest thousandths = 4.885

(ii) 75.634 to the nearest whole number nearest whol number place vvalue = ones

0	Tth	Hth	THth	Hth
7	5 .	6	3	4
+ 1				
7	6 .	0	0	0

75.634 to the nearest whole number = 76

EVALUATION ACTIVITY:
Macmillan Primary Mathematics Pupils' Bk 7 Pg 24 Exrcise 7
Mathematics Revision Hand Book P5, 6 & 7 Pg 28

Remarks:

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LESSON 17:
SUB TOPIC: DECIMALS
CONTENT: Addition and of decimals
Examples:

1.
3.4 + 0.23
= 3.4
+ 0.23
_____
3.63
_____

2.
5 – 0.03
5.00
- 0.03
_____
4. 97
_____

3.
8 – 5.16 + 3.07
Re-arrange first 8 + 3.07 – 5 – 16

8 .00	11 . 07
+ 3.07	- 5.16
11 .07	5 . 91

Emphasis on:

(i) arrangement of numbers according to place value.
(ii) re-arrange when two signs are given.

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EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:12 Pg 94 (Old Edition)
Remarks:

LESSON 18
SUB TOPIC: **ORDERING DECIMALS**
CONTENT: (i) Ascending order
(ii) Descending order

Examples:

1. Arrange 0.36, 0.054, 0.07 and 0.8 in descending order.
Express decimals as fractions

$0.36 = \frac{36}{100}$ $0.054 = \frac{54}{1000}$ $0.07 = \frac{7}{100}$

$0.8 = \frac{8}{10}$

Find the LCM which is 1000.

$\frac{36}{100} \times 1000$ $\frac{54}{1000} \times 1000$ $\frac{7}{100} \times 1000$ $\frac{8}{10} \times 1000$

3.6×10 7×10 8×100
$= 360$ $= 54$ $= 70$ $= 800$

∴ Order = 0.8, 0.36. 0.07, 0.054

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:14 Pg 95 (Old Edition)

Remarks:

LESSON 19
SUB TOPIC: **DECIMALS**
CONTENT: Multiplication of decimals
Examples:

1. 27.36 x 6

$= 27.36 \times 6$

164.16

2. 11.9 x 0.3

$\frac{119}{10} \times \frac{3}{10}$

$\frac{3.57}{100}$
$= 3.57$

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:15 Pg 96 (Old Edition)
Remarks:

LESSON 20
SUB TOPIC: **DECIMALS**
CONTENT: Division of decimals
Examples:

1. $0.72 \div 9$

$\frac{72}{100} \div \frac{9}{1}$

$\frac{72}{100} \times \frac{9}{1}$

$\frac{8}{100}$

$= 0.08$

2. $0.12 \div 0.3$

$\frac{12}{100} \div \frac{3}{10} = \frac{4}{10}$
$= 0.4$

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:16 Pg 97 (Old Edition)
Remarks:

LESSON 20
SUB TOPIC: **DECIMALS**
CONTENT: Multiplication and division of decimals
Examples:

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1. 0.24×0.3
0.8

$= \left(\frac{24}{100} \times \frac{3}{10}\right) \div \left(\frac{8}{10}\right)$

$= \frac{24}{100} \times \frac{3}{10} \times \frac{10}{8}$

$= \frac{3 \times 3}{100} = \frac{9}{100}$

$= 0.09$

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 14:19 Pg 135 (Old Edition)
Remarks:

LESSON 22
SUB TOPIC: **RATIOS**
CONTENT: Definition
- **A ratio is a comparison of objects**
- **Forming ratios**

Examples:
A class has 20 boys and 30 girls. What is the ratio of boys to girls?
The ratio of boys to girls.

$= \frac{\text{Number of boys}}{\text{Number of girls}}$

$= \frac{20}{30}$ lowest terms $\frac{2}{3}$

The ratio of boys to girls is 2:3 and the ratio of girls to boys is 3:2

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:1 Pg 96 (Old Edition)
Remarks:

LESSON 23
SUB TOPIC: **INCREASING AND DECREASING QUANTITIES IN A GIVEN RATIO**
CONTENT: Increasing and decreasing quantities in a given ratio
Examples: Increase 80kg in the ratio of 5:4

New : old
5 : 4
? : 80kg
4 parts make 80kg
1 part makes $\frac{80}{4} = 20$
5 parts make $\frac{20}{100}$ x 5
100kg

Example 2: Decrease 2000= in the ratio of 3:5
New old
3 5
? 2000
5 parts make 2000=
1 part makes $\frac{2000}{5} = 400$
3 parts make 400 x 3 = 1200/=

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:2 Pg 97 Nos 1 -6 (Old Edition)

Remarks:

LESSON 24
SUB TOPIC: **FINDING RATIO OF INCREASE OR DECREASE**
CONTENT: Finding ratio of increase or decrease
Examples:
In what ratio must 30 be decreased to 24?
New : old
24 : 30
$24 \div 6$: $30 \div 6$
$= 4$: 5

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:2 Pg 97 Nos 10, 111 & 12
Remarks:

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LESSON 25
SUB TOPIC: **SHARING IN RATIOS**
CONTENT: Sharing quantities in ratios
Examples:
1. Share 18 in the ratio 4:5
Total ratio = 4 + 5 = 9
1st share = $\frac{4}{9}$ x 18 = 4 x 2

P.1	P.2	Total
4parts	5parts	9parts
		18

4parts rep 18
1part rep $\frac{18}{9}$
4parts rep $\frac{18^2}{9_1}$ x 4
= 8

2nd share = $\frac{5}{9}$ x 18 x 5 x 2
= 10

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:3 Pg 99 (Old Edition)

Remarks:

LESSON 26
SUB TOPIC: **RATIOS**
CONTENT: Finding the number shared in the given ratio
Examples:
1. Mary, Jane and shared money in the ratio 2:3:1 respectively. If Mary got shs 12,000= how much money did they share?
Total ratio = 2 + 3 + 1 = 6
Mary had 2 parts
1 part = $\frac{12000}{2}$
6 parts = $\frac{12000 \times 6}{2}$
= 12000 x3
= 36,000=
They shared sh 36,000=

2. Application of ratios
The director of Sir Apollo Kaggwa Schools distributed test books to his schools A:B:C in a ratio of 2:4:6 respectively. If school C got 60 more books than A, how many books were distributed altogether?

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 9:3 Pg 112 (Old Edition)
Remarks:

LESSON 27
SUB TOPIC: **PROPORTION**
CONTENT: Direct proportion
Examples:
1. Two books cost shs 2000= Find the cost of 6 similar books.
2 books cost sh 2000=
1 book costs sh 2000= $\frac{3}{}$
6 books cost shs $\frac{2000 \times 6}{2_1}$
2000 x 3
Shs 6000=

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 9:4 Pg 115 (Old Edition)

LESSON 28
SUB TOPIC: **PROPORTION**
CONTENT: Direct proportion
Examples:
1. $^2/_3$ of the books in the book shop are school text books. How many books are in the book shop altogether if the school textbooks are 240?

Method 1:	Method 2:
2 pairs make 240 books	Let all the books be a 2/3 of a
= 1 part makes $\frac{240}{2}$	= 240 books
	2a = $\frac{240}{3}$
∴ 3 parts make $\frac{240 \times 3}{2}$	3 x 2a = 240 x 3
= 120 x 3	2 3 2
= 360 books	∴ a = 120 x 3
	= 360 books

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:5 Pg 102 (New Edition)

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Remarks:

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LESSON 28
SUB TOPIC: **PROPORTION**
CONTENT: Indirect/inverse proportion
Examples:
1. 4 men take 9 days to complete a job. How long will 12 men take to finish the job at the same rate?
4 men take 9 days
1 man take 9 x 4 days

12 men take $\frac{9^{3} \times 4}{12}$ days
= 3 days

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 7:6 Pg 104 (New Edition)
Remakes:

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_____

LESSON 29
SUB TOPIC: **CONSTANT PROPORTION**
CONTENT: Constant Proportion
Definition of:
Constant proportion: Neither direct nor inverse proportion. The proportion is always constant.
Example:
A bus carrying 30 people take 2 hours to reach Jinja. How long would it take if it carried 10 people and was driven at the same speed?
Solution: Since the speed driven at is the same, it would take: 2 hours to reach Jinja.
EVALUATION ACTIVITY:
Primary Mathematics for Uganda Pg 6 exercise 4.
Remarks

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_____

LESSON 32

SUB TOPIC: **FRACTIONS -** Changing percentages to fractions
CONTENT: Meaning of percentages
- Changing percentages into common fractions.

Examples:
Express 35% as a common fraction:

$35\% = \frac{35}{100} = \frac{35 \div 5}{100 \div 5} = \frac{7}{20}$

$120\% = \frac{120}{100} = \frac{6}{5} = 1\frac{1}{5}$

Changing fractions into percentages:
Examples:
Write 1/3 as a percentage.
Solution:

$= \frac{1}{3} \times 100\% = \frac{100\%}{3} = 33\ 1/3\%$

$\frac{2}{5} = 2 \times 100\% = 2 \times 20\% = 40\%$

Changing percentage to decimals:
25% as a decimal

$25\% = \frac{25}{100} = 0.25$

112% as a decimal

$112\% = \frac{112}{100} = 1.12$

Changing decimals to percentages:

$0.2 = \frac{2}{10} = \frac{2}{10} \times \frac{10}{10} = \frac{20}{100} = 20\%$

1.5 as a percentage

$1.5 = \frac{15}{10} \times \frac{10}{10} = \frac{150}{100} = 150\%$

EVALUATION ACTIVITY:
Primary School Maths Bk 7 Pg 105 – 106 exercise 1 and 2.
A New MK Primary Mathematics 2000 Bk 7 Pg 105 – 106 exercise 8:1 and 8:2 & 8:4, 8:5
Primary Maths Revision and Practice (Gladys Wambuzi) Pg 70/71

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Remarks:

LESSON 33
SUB TOPIC: **CHANGING PERCENTAGES TO RATIOS AND VISE-VERSA**
CONTENT: Changing percentage to ratios
Examples:
Express the following as ratios:

1. 5%
   5% = $\frac{5}{100}$
   = $\frac{1}{20}$
   Ratio = 1:20

2. 33 1/3% = 100%
   3
   $\frac{100}{3} \frac{100}{1}$
   = $\frac{100}{3} \times \frac{1}{100}$
   = $\frac{1}{3}$
   Ratio = 1:3

Changing ratios to percentages:
Examples:

Express as a percentage.

(i) 4.5
Ratio = 4:5
Fraction = $\frac{4}{5}$
$\frac{4}{5} \times \frac{20}{20}$
= $\frac{80}{100}$
= 80%

(ii) $\frac{1}{4} : \frac{1}{3}$
$\frac{1}{4} \frac{1}{3}$
$\frac{3}{4} \times 100\%$
= 3 x 25%
= 75%

(iii) 1:8

EVALUATION ACTIVITY:

New MK Primary Mathematics Bk 7 exercise 8:3 and 8:6 Pg 106 & 108.

Remarks:

LESSON 34
SUB TOPIC: **PERCENTAGES**
CONTENT: Finding percentages of quantities
Examples:

1. Find 40% of 150
   40% of 150
   $\frac{40}{100} \times 150$
   = 4 x 15
   = 60

2. A piece of land is 200 hectares. A farmer used 60% of it for cultivation. How much land is = 40 used for cultivation
   Cultivation = 60% of 200
   = $\frac{60}{100} \times 200$ hectares
   = 60 x 2 hectares
   = 120 hectares

3. If 20% of a number is 40, what is the number?
   Solution:
   Let the number be x
   20% of x = 40
   $\frac{20}{100} \times x = 40$
   $\frac{X}{5} \times 5 = 40 \times 5$
   X = 200

   or:
   20% of a number = 40
   1% of a number = $\frac{40}{20}$
   100% of the number
   $\frac{40}{20} \times 100$
   = 40 x 5 = 200

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 8:9 and 8:10 Pg 111 and 112 (New Edition)

Remarks:

LESSON 35
SUB TOPIC: **FINDING THE REMAINING PERCENTAGES**
CONTENT: Examples

1. If 40% of a class is absent, what percentage is present?
   What percentage is a present?
   Those absent = 40%
   Those present = 100% - 40%
   = 60%

2. 35% of the pupils in a school like rice while 10% like potaties. If the rest like posho, what percentage of pupils like posho?
   %ge for rice and potatoes = 35% + 10%
   = 45%
   Percentage for posho = 100% - 45%

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= 55%

3. Expressing quantities and percentages:
Examples:

(i) Write 20 as a percentage of 80.

Fraction = $\frac{20}{80}$

= $\frac{1}{\cancel{20}} \times \frac{25}{\cancel{100}\%}$
$\cancel{80}$
4

= 25%

(ii) Amos got 12 out of 25 in a Maths test. Express his mark as a percent.

Fraction = $\frac{12}{25}$

Percentage = $\frac{12}{25} \times \frac{4}{\cancel{100}\%}$
1

= 12 x 4%

= 48%

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 8:7 and 8:8 Pg 109 - 110 (New Edition)
Remarks:

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LESSON 37
SUB TOPIC: PERCENTAGES
CONTENT: Application of percentages
Examples:

1. Nanyonjo earns shs 12,000. She spends 75% and saves the rest.

(i) How much does she spend?
Solution:
= 75% of 12,000=
= $\frac{75}{100}$ x 12,000
= 75 x 120
= 9,000

(ii) How much does she save?
(100% - 75%) of 12,000
= 25% of 12,000
= $\frac{25}{100}$ x 12000
= 25 x 120=
= 3000

Or
12,000=
- 9000=
_____
3000=
_____

2. If 30% of my salary is spent on food and I save shs 21,000. What is my salary?
Solution:
Let the salary be P. Method II

Total	Food	Savings
100%	30%	100% - 30% = 70%

70% of P = 21,000
70 x P = 21,000
$\frac{70}{100}$ x P = 21
$\frac{7P}{10}$ x 10 = 210,000
10
$\frac{7P}{7}$ = $\frac{210,000}{7}$
P = 30,000=

Percentage saved.
100% - 30% = 70%
70% of salary = 21,000
10% of salary = $\frac{\cancel{21000}}{\cancel{70}}$ $\frac{300}{1}$

100% of salary = 300 x 100
= 30,000=

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 8:11 & 8:12 Pg 113 - 114 (New Edition)

Remarks:

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LESSON 38
SUB TOPIC: PERCENTAGE INCREASE AND DESCREASE
CONTENT: Percentage increase
Examples:

1. Increase 800 by 20%
New amount: = 100% + 20% of old amount
= 120% x shs 800
= $\frac{120}{100}$ x 800

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= 960=

2. Increase 800 pupils by 12 ½ %:
New number = 100% + 12 ½ % of old number
= 112 ½ % of 800 pupils
= $\frac{225\%}{2}$ x 800 pupils
= $\frac{225}{2} \div \frac{100}{1} \times \frac{800}{1}$
= $\frac{225}{2} \times \frac{1}{100} \times \frac{800}{1}$
= (225 x 4) pupils
= 900 pupils

3. Increase shs 4800 by 10% and then by 20%
Old amount = shs 4800
10% increment = 100% + 10% = 110%
20% increment = 100% + 20% = 120%
= 110% x 120% of shs 4800
= $\frac{110}{100} \times \frac{120}{100}$ x 4800 New amount
= 11 x 12 x 48 = 6336

EVALUATION ACTIVITY:
New MK Primary Mathematics Bk 7 exercise 8:7 and 8:8 Pg 109 - 110 (New Edition)
Remarks:

LESSON 39
SUB TOPIC: PERCENTAGE DECREASE
CONTENT:
Examples:
1. Decrease shs 1,500 by 10%
New amount as percentage
= 100% - 10% = 90%
New amount: = 90% of 1500/=
= $\frac{90}{100}$ x 1500
= 90 x 15/=
= 1350/=

2. Decrease 720 dollasa by 33 $\frac{1}{3}$%
New percentage = 100% - 33 $\frac{1}{3}$%
= 66 2/3%
New amount = 66 $\frac{3}{2}$ of 720 dollars
= $\frac{200\%}{3}$ of 720 dollars
= $\frac{200}{3} \times \frac{1}{\cancel{100}} \times \frac{\cancel{720}\ 240}{1}$ dollars
= 2 x 240 dollars
= 480 dollars
3. Decrease shs 12000 by 15% and then by 20%

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 Pg 117 exercise 8:14
Mathematics Revision Handbook P5 – P7 Pg 101

Remarks:

LESSON 40
SUB TOPIC: FINDING THE ORIGINAL NUMBER AFTER %age INCREASE
CONTENT:
Examples:
1. Percentage after increase:
2. What amount of money when increased by 20% becomes 1440?
Let the amount be x.
New amount = (100% + 20) of x
120%x = 1440=
$\frac{120\ x}{100}$ = 1440
10 x $\frac{12x}{10}$ = 1440 x 10
$\frac{12x}{12} = \frac{\cancel{14400}\ 1200}{\cancel{12}\ 1}$
X = 1,200

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EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 6 & 7 Pg 118 exercise 8:15
Remarks:

LESSON 41
SUB TOPIC: FINIDNG THE ORIGINAL NUMBER AFTER THE DECREASE
CONTENT:
Examples:

1. A worker's salary was decreased by 35% to shs 1560.
   Let the old salary be x.
   New salary = (100% - 35%) of x

   $1560 = \frac{65x}{100}$

   $1560 \times 100 = \frac{65}{100} \times x \times 100$

   $\frac{\cancel{1560}^{120} \times \cancel{100}^{20}}{\cancel{65}_{5}} = \frac{\cancel{65}x}{\cancel{65}_{1}}$

   120 x 20 = x
   240 = x

   Method II:
   Percentage after decrease
   100% - 35 = 65%
   65% of the salary = 1560

   1% of salary = $\frac{\cancel{1560}^{24}}{\cancel{65}_{1}}$

   100% of salary = 24 x 100
   = 2,400=

2. What number when decreased by 25% becomes 30,000?

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 Pg 119 exercise 8:16
Remarks:

LESSON 42
SUB TOPIC: FINDING PERCENTAGE INCREASE AND DECREASE
CONTENT:
Examples:

1. By what percentage will 480 be increased to become 540?
   Old number = 480
   New number = 540
   Increase = 540 – 480
   = 60
   Percentage increase:
   $= \frac{60}{480} \times 100\%$
   $= \frac{100}{8}\%$
   = 12 ½ %

2. When 240 is decreased, it becomes 192. Calculate the percentage decrease.
   Solution:
   Old number = 240
   New number = 192
   Decrease = 240 – 192
   = 48

   Percentage decrease $= \frac{\cancel{48}^{1} \times \cancel{100}^{20}}{\cancel{240}_{5}}$
   = 20%

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 6 & 7 Pg 121 - 122 exercise 8:18 and 8:19
Remark:

LESSON 43
SUB TOPIC: PERCENTAGE PROFIT AND LOSS
CONTENT: Percentage profit
Examples:

1. An article was bought at 100,000 and sold at shs 120,000. Calculate the percentage profit.
   Solution:
   Cost price = 100,000
   Selling price = 120,000
   Profit = 120,000 – 100,000
   = 20,000

   Percentage profit
   $= \frac{\text{Profit}}{\text{CP}} \times 100\%$
   $= \frac{20,000}{100,000} \times 100\%$
   = 20%

   Percentage loss:

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2. I bought a house at $ 120,000 but I was forced to sell it at $ 100,000. Find my percentage loss.

Solution:
Buying price = 120,000
Selling price = $ 100,000
Loss = BP – SP
120,000 – 100,000
= $ 20,000

Percentage loss:
$= \frac{\text{loss}}{\text{Cost price}} \times 100\%$
$= \frac{20{,}000}{120{,}000} \times 100\%$
$= \frac{100}{6}\% = 16\ \frac{2}{3}\%$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 123 – 124 exercise 8:20/8:21
Mathematics Revision Hand book P.5 – P.7 Pg 104

Remarks:

LESSON 44
SUB TOPIC: FINIDNG COST PRICE FROM PERCENTAGE PROFIT/LOSS
CONTENT:
Examples:

1. After selling a pair of shoes at shs 21,000, a trader made a profit of 20%. Find the buying price of the pair of shoes.
Cost price as a percentage = 100%
Selling price as a percentage = 100% + 20% = 120
120% represents = shs 21,000
1% represents = 21,000 / 120
100% represents = $\frac{21{,}000}{120} \times \frac{100}{1}$
$= \frac{700}{1} \times \frac{25}{1}$
= (25 x 700)
= 17,500=

2. By selling his cow at shs 34,000, Obala made a loss of 15%. How much did the cow cost?
Loss = 15%
CP = 100%
SP = 100% - 15%
= 85%
85% of CP = 34,000
86CP = 34,000
$\frac{85}{85}CP = \frac{34{,}000 \times 100}{85}$
CP = 400 x 100=
Cost price = 40,000=

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 Pg 125 – 126 exercise 8:22
Mathematics Revision Hand book P.5 – P.7 Pg 106 - 107
Remarks:

LESSON 45
SUB TOPIC: APPLICATION OF PERCENTAGE PROFIT AND LOSS
CONTENT: Examples:

1. The cost price of a 50kg bag of sugar is shs 45,000. At what price must he sell each kilogram in order to make a profit of 20%.
Cost price for 50kg = 45,000
Cost price for 1kg = $\frac{45{,}000}{50}$
%age profit = 900=
Selling price as percentage = 100%+ 20% = 120
Selling price for 1kg
$\frac{120}{100} \times 900$
(120 x 9)
1080=

2. Kakeeto bought three bags of soya beans at shs. 21,000 each. If each bag weighed 70kg and sold each kg at shs 250.
(a) Calculate his percentage gain or loss.
(b) At what price must he sell each kg in order to make a profit of 20%?

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 123 – 124 exercise 8:20/8:21
Mathematics Revision Hand book P.5 – P.7 Pg 104

LESSON 46

SUB TOPIC: DISCOUNT

CONTENT: Meaning of discount
Finding discount

Example:

1. **The market price of a shirt was shs 1500. After a discount, a customer paid shs 1200. How much was the discount?**
Discount = Marked price – cash price
= 1500/= - 1200/=

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= 300/=

Express the discount as a percentage

Percentage discount = discount x 100%
Marked price

$= \frac{300}{1500} \times \frac{100}{5}\% = 20\%$

2. The marked price of a bicycle is shs 60,000. A customer is offered a discount of 15%
How much money does the customer pay?

Discount = 15% of marked price
= $\frac{15}{100}$ x 60,000
= 9000=
Amount paid = 60,000=
= - 9,000
51,000=

Amount paid = 100% - 15% = 95%
= 85% of 60,000
$\frac{85}{100} \times 60{,}000$
= 85 x 600=
= 51,000=

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 129
Mathematics Revision Hand book P.5 – P.7 Pg 109

Remarks:

LESSON 47

SUB TOPIC: FINDING ORIGINAL PRICE WHEN GIVEN PERCENTAGE DISCOUNT

CONTENT:

Example:

1. Cissy paid shs 18,000 for a hand bag after being a discount of 10%. Calculate the marked price.

Solution:

Cost price as %age = 100%
Discount offered = 10%

Cissy paid = 100% - 10%
= 90%

Let the marked price be x
90% of x = shs 18,000

$\frac{90}{100} \times \frac{x}{1}$ = shs 18,000
$\frac{90x}{100 \times 100} = 18{,}000 \times 100$
200

90% rep 18000
1% rep $\frac{18000}{90}$

100% rep $\frac{18000 \times 100}{90}$
100% rep 20,000/=

$\frac{90x}{90} = \frac{18{,}000 \times 100}{90}$
X = 20,000

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 130-131 exercise 8:25

Remarks:

LESSON 48

SUB TOPIC: FINDING MARKED PRICE AND SELLING PRICE WHEN GIVEN DISCOUNT (%ge DISCOUNT & AMOUNT DISCOUNT)

CONTENT:

Example:

1. Kamya was given a discount 17% of the marked price which amounted to 8500=.
Calculate the marked price and selling price.

Solution:

%age discount – 17%
Discount – 8500=
Marked price = 100%
But 17% rep 8500
1% rep $\frac{8500}{17}$
100% rep ($\frac{8500}{17} \times 100$)

50,000/=

500 x 100

Selling price
100% - 17%
= 8%
$\frac{83}{100} \times 50{,}000$
83 x 500
= 41,500=
Or 50,000 – 8500

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 131 exercise 8:35 Qns 5, 7 & 9

Remarks:

LESSON 49

SUB TOPIC: COMMISSION

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CONTENT: Meaning of commission
Finding commission

Example:

1. A Salesman is paid a salary of 10,000 he sold worth shs 6500. How much money did he get altogether?

Solution:

Salary = 10,000

Commission = 10% of 6500=

$\frac{10}{100} \times 6500$

= 650

Amount he got altogether = 10,000 + 650

10,000
6500
10,650
= shs 10,650

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 132 - 133 exercise 8:26

Remarks:

LESSON 50

SUB TOPIC: **SIMPLE INTEREST**
CONTENT: Review the following:

- **Terms used**
- **Simple interest – Time (T)**
- **Principal (P) amount - Rate (R)**

Example:

1. A Man deposited shs 40,000 for 5 years at a simple interest rate of 2 ½ % per year. Calculate his simple interest and the total amount after 5 years.

Solution:

Simple interest (SI)
SI = PTR
= 40,000 x 5 x 2 ½ %
= 40,000 x 5 x $\frac{5}{200}$
= 40,000 x 5 x $\frac{5}{200}$
= 200 x 25
= shs 5,000

The simple interest:
is shs 5,000
Amount = principle interest

= shs (40,000 + 5000)
= shs (45,000)

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 132 - 133 exercise 8:26

Remarks:

LESSON 51

SUB TOPIC: **FINDING THE PERCENTAGE RATE**
CONTENT:

Example:

1. Calculate the rate of interest if shs 30,000 can yield a simple interest of shs 1,125 in 9 months.

Solution:

Method 1
PTR = SI
$\frac{30,000}{1} \times \frac{9}{12} \times \frac{R}{100}$ = sh 1,125
150 50
$\frac{30,000 \times 9}{12 \times 100} \frac{R}{6}$ = 1125

$\frac{25 \times 9R}{25 \times 9}$ = $\frac{1125}{25 \times 9}$
5

R = 5%

Method 2:
Rate = $\frac{SI \times 100}{P \times T}$
$\frac{1125 \times 100}{30,000 \times 9}$
$\frac{1125}{300 \times ¾}$
375 75

= $\frac{1125 \times 4}{300 \times 3}$
= $\frac{75 \times 4}{60}$
30
6
3 Rate = 5%

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 138 - 139 exercise 9:2

Remarks:

LESSON 52

SUB TOPIC: **CALCULATING PRINCIPAL**
CONTENT:

Example:

1. What principal will yield shs 6,000 at 5% per year for 3 years?

Solution:

SI = 6000 $\frac{15P}{} = 6000$

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R = 5% per year
T = 3 years
P x R x T = Simple interest

P x 5/100 x 3 = 6000

100
100 x 15P/100 = 6000 x 100
40,000
15P/15 = 600,000/15
P = 40,000
Principal = 40,000=

2. A farmer borrowed money at 12 ½ per year. After 2 years, a simple interest of shs 8,000 was paid. Find the amount borrowed.

Solution:
SI = 8,000=
T = 2 years
R = 12 ½ %
P = SI x 100 / R x T
P = 8,000 x 100 / 12 ½ x 2

P = 800,000 25/2 x2
800,000/25 =
= 32,000
Principal = 32,000

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 140 exercise 9:3

Remarks:

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LESSON 53
SUB TOPIC: CALCULATING TIME
CONTENT:
Example:

1. In what time will shs 12,000 yield an interest of shs 1,800 at 5% per year.

P x T x R = SI
SI = 1800=
P = 12,000
R = 5%

P x R x T = SI
12,000 x 5/100 x T = 1800=
~~600~~ T = ~~1800~~ 3
~~600~~ ~~600~~ 1

T = 3 years

2. How long will 48,000= take to yield shs 5400 at 15% per year?

Solution:
P = 48,000
R = 15% per year
SI = 5400=
P x R x T = SI
48,000 x 15/100 x T = 5400=

480 x 15T = 5400=
7200T = 5400
7200 7200
T = ¾ years
= (3/4 x 12)
= 9 months

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 Pg 142 exercise 9:4
Remarks:

_____

_____

TOPICAL EXERCISE ON FRACTIONS

1. **Name the types of fractions and gie an example on each.**
2. **Divide: 2/3 1/3**
3. **Simplify: ½ - ¼ - 1/3**
4. **Salim's bicycle got spoilt after he had covered a distance of 20km which was ¼ of his journey. How long was the journey?**
5. **In a class of 120 pupils, the ratio of girls to boys is 4:2. Find the number of boys.**
6. **Work out: ¼ + 3/5.**
7. **Simplify: 0.27 x 0.06 / 0.9 x 0.3**
8. **Work out: ¼ - 1/8**
9. Otim had 30km still to cover after traveling 3/5 of the journey. How was the journey?
10. Simplify: ½ ÷ ¼
11. Subtract: ½ - ¼
12. In Sir Apollo Schools, ¾ of the pupils who sat for the Primary Leaving Examination passed.
    (a) If those who failed were 30, find the number of pupils who passed.
    (b) What percentage of pupils failed the examination?
13. 2/3 – ½
14. Add: 35.7 + 0.35
15. A bus broke down after covering 5/7 of the journey. The remaining distance to complete the journey was 140km. How long was the whole journey?
16. Divide: 4.2 ÷ 0.03
17. Add: 4.05 + 11.4 + 2.36
18. Usamah spent ¼ of his salary on food, 1/3 of the remainder on debts and saved shs 3,600= .

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(a) How much did he spend on paying debts?
(b) What are his earnings per month?

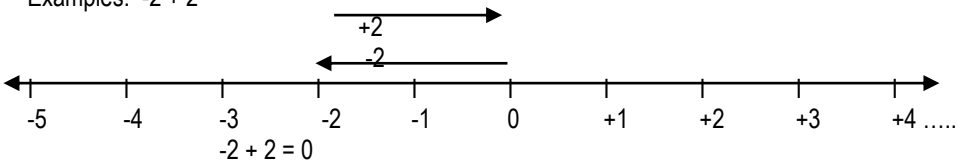
19. Arrange in ascending order: ½, ¾, 0.03 and 2/3.
20. Tap A takes 9 minutes to fill in the tank.
Tap B takes 12 minutes and Tap C takes 18 minutes. How long will A, B and C take to fill the tank if opened together?
21. The cost of 4 rules is shs 800. What is the cost of 6 similar rulers?
22. 5 handkerchiefs take 30 minutes to dry when exposed to the sunshine. How long will 12 handkerchiefs take to dry if exposed to the same sunshine?
23. 12 men can build a classroom in 5 days.
(a) How many men are needed to do the whole job in 1 day?
(b) How long will 10 men take to do the job?

Fractions (Percentages) Topical questions:

1. Express 2:5 as a percentage.
2. Change 0.8 as a percentage
3. Express 66.6% as a fraction to the lowest terms.
4. Express 40cm as a percentage of 2M.
5. What is 10% of 2200 pencils?
6. A bag of cement cost shs 5,600. How much will it cost after a 30% increase?
7. Asiimwe deposited shs 50,000 in Uganda Commercial Bank which offers an interest of 30% per year. How much money will Asiimwe have in the Bank after six months?
8. Okello bought a car at shs 2,500,000 and sold it to Otim at a profit of 20%. Otim then sold it to Tumwine at a loss of 15%. How much did Tumwine pay for the car?
9. If 280 is increased by x it become 392. Find the value of x.
10. Decrease 65kg by 5.
11. A farmer has the following animals:
Chicken = 30
Goats = 35
Sheep = 15
Rabbits = 10
What percentage of the total animals are rabbits.
12. Milk was mixed with water to make tea. If 14 litres of milk was used and this was 40% more than the amount of water in the tea, how tea was prepared?
13. Mugisha bought about at shs 200,000 and sold it as shs 180,000 what was his percentage loss?
14. (a) Okello's wage was increased by 10% to shs 77,000 per month. Find his salary?
(b) If his new wage of shs 77,000 was decreased by 5%, find his final wage.
15. A man spent 20% of his salary on food, 10% on transport, 40% on medical care and the rest on rent.
(i) Find the percentage of his salary spent on rent.
(ii) How much does he spend on medical care if he earns 800,000 as his salary?
(iii) How much more is spent o food than transport?
16. Fatuma had shs 5,000 if she used 10% of her money to buy soap what was her balance?

TOPIC 9: INTEGERS
LESSON 1:
SUB TOPIC: OPPOSITES/INVERSES/ADDITIVE INVERSES
CONTENT:

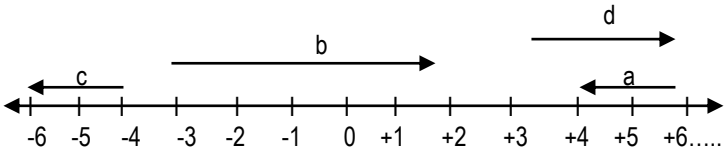
Examples: -2 + 2



-2 + 2 = 0

Note: - Arrows pointing to the positive direction are positive arrows.
- Arrows pointing to the negative direction are negative arrows.

Example 1. Give the integers indicated by arrows on the number line below.



Example 3. What is the additive inverse of +6
Let the inverse be x.
+6 + x = 0
+6 – 6 +x = 0 – 6
X = -6.

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 13 Nos 1, 2 & 3 Pg 348 (New Edition)
Remarks:

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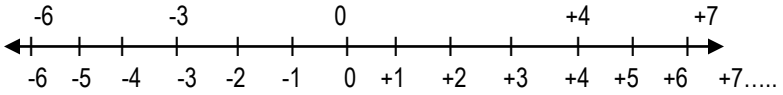
LESSON 2:
SUB TOPIC: ORDERING INTEGERS ON A NUMBERLINE
CONTENT:
The number line:



Note: - (i). All integers to the left of zero are –ve.
(ii) All integers to the right of zero are +ve
(i) Any integer is less than that on its right.
(ii) Any integer is more than that on its left.

Examples
1. Use >, < or = to compare the pair of integers. Given:
(i) -6 < -3
(ii) -3 < 0
(iii) 0 < +4
(iv) 0 > -6
(v) -3 > -6
(vi) +7 > +4
(vii) +4 = +4
(viii) -8 = -8
2. Arrange in descending order/decreasing order the following integers:
-6, 0 +7, -3, +4
Solution: +7, +4, 0, -3, -6

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 13 Nos 4 and 5 Pg 348 (New Edition)
Remarks:

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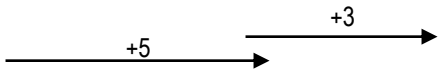
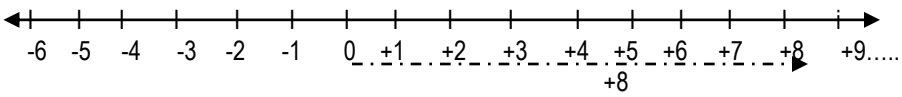
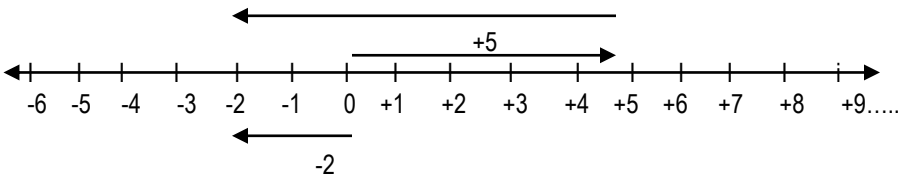
LESSON 3:
SUB TOPIC: ADDITION OF INTERS USING A NUMBER LINE
CONTENT:
Example 1. +5 + +3 = +8

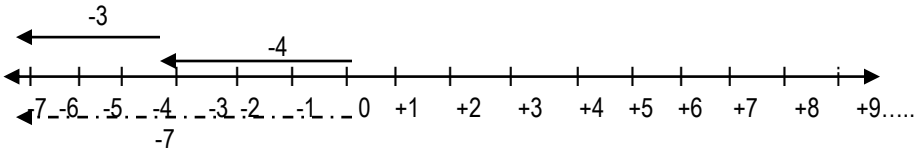




2. +5 + -7 = -2



3. -4 + -3 = -7



EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 1 a, b, c, dPg 346 (New Edition)

Remarks:

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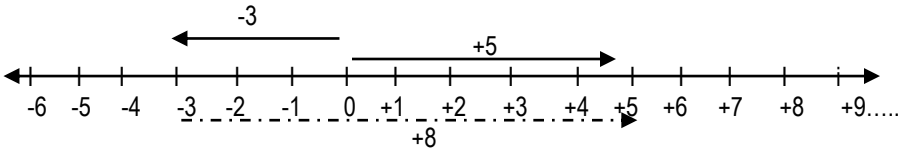
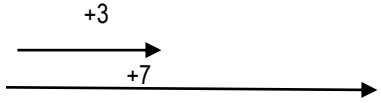
LESSON 4:

SUB TOPIC: SUBTRACTION OF INTEGERS USING A NUMBERLINE
CONTENT:
Example 1. +5 - -3 = +8



(-) Means start from where the first arrow started and move in the direction of the second integer. How far are you from the end point of the first integer.

2. +7 - +3 = +4



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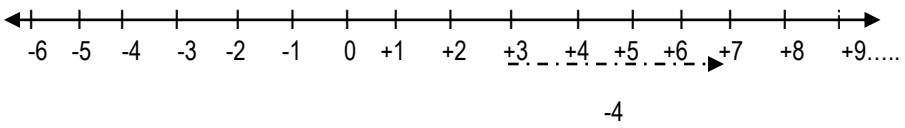


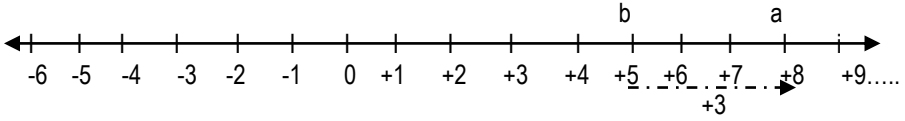
EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 19:2 No 2. Pg 356 (New Edition)

Remarks:

LESSON 5:

SUB TOPIC: **SUBTRACTION OF INTEGERS BY NAMING THE INTEGERS USING LETTERS**

CONTENT:
Example 1. +8 - +5 = +3
Naming the integers +8 as a and +5 as b.



Subtraction means moving backwards.
The arrow shows the answer.

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 19:4Pg 358 (New Edition)

Remarks:

LESSON 6:

SUB TOPIC: **SUBTRACTING INTERGERS WITHOUT NUMBER LINES**
CONTENT:
Example 1.

1. +8 - +7 Note =x + = -
   +8 – 7
   = +1
2. -8 - +3
   = -8 – 3
   = -11
3. -5 - -2 Note – x - = +
   = -5 + 2
   = +2 – 5
   = - 3

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 19:2Pg 356 (New Edition)

Remarks:

LESSON 7:

SUB TOPIC: **ADDING INTEGERS WITHOUT USING A NUMBERLINE**
CONTENT:
Example 1.

1. +7 + +2 +ve X +ve = +ve
   = +7 + 2
   = +9
2. +7 + -2 +X- = - +ve X –ve = -ve
   = +7 – 2
   = +5
3. -7 + -2 = -7 -2 +ve X –ve = -ve
   = -9

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 19:1 Nos 1 and 2 Pg 352 (New Edition)

Remarks:

LESSON 8:
SUB TOPIC: **MULTIPLICATION OF INTEGERS**
CONTENT:

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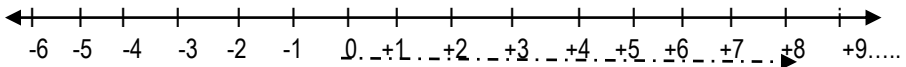
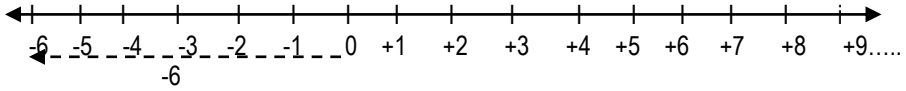
Example 1.
Note: +ve x +ve = +ve
+ve x =ve = -ve
-ve x –ve = +ve
Examples:
1. +2 x +6 = +12
2. +2 x -6 = -12
3. -2 x -6 = +12
Multiplication of integers on a number line:
Examples:
1. +2 x +3



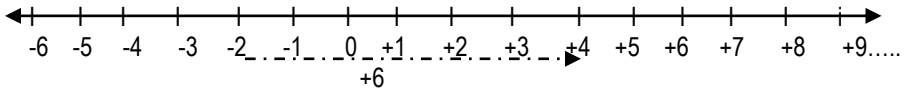
From 0 make 2 jumps of +3
+2 x +3 = +6

2. +2 x -3



From 0 make 2 jumps of -3
+2x -3 = -6

3. -2 x -3



Standing at -2 facing in the –ve direction, make two jumps of 3 backwards. How far are you from -2 to te final point and which direction.

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 19:6 Pg 352 (New Edition)

Remarks:

LESSON 9:
SUB TOPIC: DIVISION OF INTEGERS
CONTENT:
-ve ÷ -ve = +ve
-ve ÷ +ve = -ve
+ve ÷ -ve = -ve
+ve ÷ +ve = +ve

Examples:
1. +16 ÷ +2 = +8
2. +16 ÷ -2 = -8
3. -16 ÷ +2 = -8
4. -16 ÷ -2 = +8
Check: -16 ÷ -2 = +8
-16 = +8 x -2
2
-16 = +8 x -2
Also -16 = +8 x -2
+8 +8
-16 ÷ +8 = -2

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 19:7 Pg 361 (New Edition)

Remarks:

LESSON 10:

SUB TOPIC: APPLICAION OF INTEGERS
CONTENT:
Bc, LOSS, Time before debts, below sea level are –ve.
AD, profit, time after, above sea levele are +ve.
Example 1:

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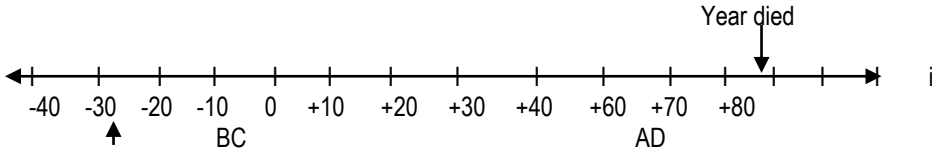
A Scientist was born in 30BC and died immediately after his birthday in 76AD. How old was he when he died?



Date of birth
The man lived from -30 to +76
The Scientist lived from +76 -)-30)
= 76 + 30
106 years

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Pg 362 - 363 (New Edition)

Remarks:

LESSON 11:
SUB TOPIC: FINITE/MODULAR SYSTEM (ADDITION)

CONTENT: Review the following digits used in the different finite system.
Examples:

(i) Add 6 + 7 = ___ (finite 9)
6 + 7
13 ÷ 9 = 1 rem 4
∴ 6 + 7 = 4 (finite 9)

(ii) 8 + 6 + 3 = ____ (finite 13)
(8 + 6) + 3
14 + 3
17 ÷ 13 = 1 rem 4
∴ 8 + 6 + 3 = 4 (finite 13)

(iii) 3 + 4 + 5 = x (finite 7)

EVALUATION ACTIVITY:
A New MK Old Edition Pupils Bk 6 Pg 47 exercise 6:2

Remarks:

LESSON 12
SUB TOPIC: SUBTRACTION IN THE FINITE SYSTEM
CONTENT: Examples:

(i) 1 – 3 = ___(finite 4)
(1 + 4) – 3
5 – 3
= 2
∴ 1 – 3 = 2 (finite 4)

(ii) 2^2 – 5 = ___ (finite 7)
(2 x 2) – 5 = ___ (finite 7)
4 – 5 = ___ (finite 7)
4 + 7 – 5
11 – 5
= 6
∴ 2^2 – 5 = 6 (finite 7)

(iii) 2 – 6 – 4 – 8 = ___ (finite 9)

EVALUATION ACTIVITY:
A New MK Pupils Bk 7 Pg 48 exercise 4:1
Remarks:

LESSON 13
SUB TOPIC: MULTIPLICATION USING THE FINITE SYSTEM
CONTENT: Examples:

(i) 5 x 7 = ____ (finite 9)
= 5 x7
= 35 ÷ 9
3 rem 8
∴ 5 x 7 = 8 (finite 9)

(ii) 2^3 = ___(finite 7)
= 2^3
= 2 x 2 x 2
= 4 x 2

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= 8 7
= 1 rem 1
∴ 2^3 = 1 (finite 7)

(iii) 4 (5 x 2) = ___ (mod 6)

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 50 exercise 4:4

Remarks:

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LESSON 14

SUB TOPIC: SOLVING EQUATIONS USING THE FINITE SYSTEM

CONTENT: Examples:

(i) x – 4 = 3 (mod 7)
x – 4 + 4 = 3 + 4)mod 7)
x + 0 = 7 (mod 7)
x = 7 ÷ 7 (mod 7)
x = 1 rem 0 (mod 7)
x = 0 (mod 7)

(ii) m + 4 = 3 (mod 5)
m + 4 – 4 = 3 – 4 (mod 5)
m + 0 = (3 + 5) – 4 (mod 5)
m = 8 – 4 (mod 5)
m = 4 (mod 5)

(iii) 2x – 3 = 3 (finite 4)
2x – 3 + 3 = 3 + 3 (finite 4)
2x + 0 = 6 (finite 4)
$\frac{2x}{2} = \frac{6}{2}$ (finite 4)
x = 3 (finite 4)

(iv) 2(2x – 1) = 4 (finite 7)
2 x 2x – 1 x 2 = 4 (finite) 7)
4x – 2 = 4 (finite 7)
4x – 2 + 2 = 4 + 2 (fin 7)
4x = 6 (finite 7)
4x = 6 + 7 (finite 7)

4x = 13 + 7 (fin 7)
1 5
$\frac{4x}{4} = \frac{20}{4}$ (fin 7
X = 5 (finite 7)

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 49 - 50 exercise 4:2, 4:3

Remarks:

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LESSON 15

SUB TOPIC: DIVISION IN THE FINITE SYSTEM

CONTENT: Review use of dial clock in dividing numbers

Example:

Divide 2 ÷ 5 = ___ (Mod 7)

Solution:

2 ÷ 5= ___ (mod 7)
= 2 + 7 5
= 9 ÷ 5 = __ (mod 7)
= 9 + 7 5
= 16 ÷ 5 = ___ (mod 7
= 16 + 7 5
= 23 ÷ 5 = ___ (mod 7
= 23 + 7 5 = ___ (mod 7)
= 30 ÷ 5 = 6 rem o (mod 7
∴ 2 ÷ 5 = 6 (mod 7)

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7
Maths Revision Hand Book 5, 6 & 7 Pg 35

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Remarks:

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LESSON 16
SUB TOPIC: **APPLICATIONS OF THE FINITE SYSTEM (FINITE 7 AND FINITE 12)**

CONTENT: Review the idea of the finite system as applied to days in a week.
Review the application of finite system in months of a year.

Example:

(i) Today is Thursday, what day of the week will it be 82 days from today?
Solution:
Thursday stands for 4
4 + 8 = ___ (finite 7)
86 = ___ (finite 7)
86 ÷ 7 = __ (finite 7)
12 rem 2
2 stands for Tuesday
It will be Tuesday.

(ii) Today is Tuesday what day of the week was it 85 days ago.
Solution:
2 represents Tuesday
2 – 85 = ___ (finite 7)
85 – (finite 7)
85 ÷ 7 = 12 rem 1
85 = 1 (fin 7)
2 – 1 = __ (finite 7)
2 – 1 = 1 (finite 7)
1 stands for Monday
The day was Monday.

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 53 exercise 4:5

Remarks:

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LESSON17:

SUB TOPIC: **APPLICATION OF FINITE 12**

CONTENT: Months of the year
Digits representing specific months in the year.
Finite 12 (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)
1 – January
2 – February
3 - March
4 – April
5 – May

Example:

(i) It is July now, which month of the year will it be after 2132 months?
Solution:
7 represents July
7 + 2132 = __(finite 2)
2139 = __ (finite 12)

```
      178
   ________
12 | 2139
     12
     93    178 rem 3
   - 84
     99    = 33 stands for March
   - 96
      3
```

So the month will be March.

(ii) It is April now, which month of the year was it 346 months ago?
Solution:
4 stands for April
4 – 346 = ___ (finite 12)
346 – (finite 12)

```
      28
   ______
12 | 346
     24          346 = 10 (fin 12)
    106
```

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- 96
10

4 – 10 = (fin 12)
(4 + 12) – 10 + (fin 12)
16 – 10 = 6 (fin 12)
6 stands for June
So the month was June

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pag 54 – 55 exercise 4:6

Remarks:

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LESSON 18
SUB TOPIC: APPLICATIONS OF THE FINITE SYSTEM 12
CONTENT: The 12 hour clock
Example:

(i) It is 7:00 am. What time will it be after nine hours from now?
Solution:
7 + 9 = __ (fin 12)
16 = __ (fin 12)
16 ÷ 12 = 1 rem 4
It will be 4:00pm
(It will change to pm if the quotient is an odd number)

(ii) It is 11:00 pm what time will it be nineteen hours from now?
Solution:
11 + 19 = __ (fin 12)
30 = __ (fin 12)
30 ÷ 12 = 2 rem 6
It will be 6:00pm
(it will remain in pm since the quotient is an even number.)

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 55- 56 exercise 4:7

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LESSON 19

SUB TOPIC: APPLICATION OF FINITE 24 IN 24 HOUR CLOCK SYSTEM
CONTENT: Example:
(I) It is 5:00pm now what time will it be after 1340 hours?
Solution:
5:00 pm = 24 hr clock
12:00 + 5:00 = 1700 hours
1340 hours 24

55 rem 20

24 | 1340
120
140
120
20

55 days rem 20 hours

∴ 17:00 + 20:00 hours
= 37:00 hours
= 37:00 hours 24
= 1 rem 13
13:00 hours or 1:00pm

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 56-57 exercise 4:8

Remarks:

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LESSON 20

SUB TOPIC: APPLICATION OF THE FINITE SYSTEM IN GROUPING ITEMS

CONTENT:
Example:
A Headmaster bought some pens. Teachers grouped them in groups of nines but seven penswere left and if they grouped them in groups of 8's, 4 pens were left. If they grouped them in 3's only 1 pen is left. How many pens were bought by the headmaster?
Solution:
7 (finite 9) = 7, 16, 25, 34, 43, 52, 61……

4 (finite 8) = 4, 12, 20, 28, 36, 44, 52, 60….

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1 (finite) = 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31

34, 37, 40, 43, 46, 49, 52, 55….

The common number for all is 52 so they were 52 pens.

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 57 exercise 4:9

Remarks:

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TOPICAL EXERCISE:

1. Find the value of 4 in the figure 78, 421.
2. Find the place value of 6 in 71.867.
3. Write down all 3 digit numerals that can be formed using the digits 7, 1, 6.
4. Find the product of the values of 2 and 4 in 823.45.
5. Write in figures: Sixty thousand sixteen.
6. Write 454 in Roman numerals.
7. Change 15 ten to binary base.
8. Change 101 two to decimal base.
9. Add 111 two to 11 two.
10. Multiply 1001 two
    X 10 two
    _____
    _____
11. What numeral has been expanded to give:
    (2 x 10) + (6 x 1) + (x 1/10) + (2 x 1/100) + (5 x 1/1000)
12. Round off to the nearest hundred thousandths 0.422563.
13. Round off 43,256 to the nearest ten thousands.
14. Solve for the unknown: if 44x = 35 nine.
15. Simplify 2 – 4 = ___ (finite 5)
16. Solve (i) y – 5 = 4 (finite 5)
    (ii) 2(x – 2) = 3 (finite 6)
17. Divide 1 5 = __ (finite 6)
18. Today is Tuesday. What day of the week will it be after 46 days
19. Today is Friday. What day of the week was it 37 days ago?
20. A Plane left Entebbe airport at 1100 hours and arrived at New Park after 27 hours. At what time did it arrive. (Give your answer in 24 hour clock).
21. How many objects are there in 2 grosses.
22. Express LXIX into Hindu Arabic Numerals.
23. Evaluate 33 = ___ (mode 7)
24. (a) Express 1534 in standard form
    (b) Express 0.006 in Scientific notation

TOPIC 6:

TOPIC: **GRAPHS AND INTERPRETATION OF INFORMATION**

LESSON 1:

SUB TOPIC: **PICTO GRAPHS**

CONTENT: 0.3

Definition:

A picot graph is where we use pictures to represent quantities of actual items.

Example:

The graph below shows the number of books that were given to different schools.

Kyengera P/s	🕮 🕮
Nakasero P/S	🕮 🕮 🕮
Mengo P/s	🕮 🕮 🕮 🕮
Old Kampala P/s	🕮 🕮
Winston P/s	🕮 🕮 🕮 🕮

Given that stands for 100 books and for 50 books.

(a) How many more books did Mengo pupils get than Kyengera?

(b) Which school had the maximum number of books?

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(c) Find the total number of books that were given out to the five schools.
(d) Calculate the average number of books that were distributed to the five schools.

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 10:1 Pg 146

Remarks:

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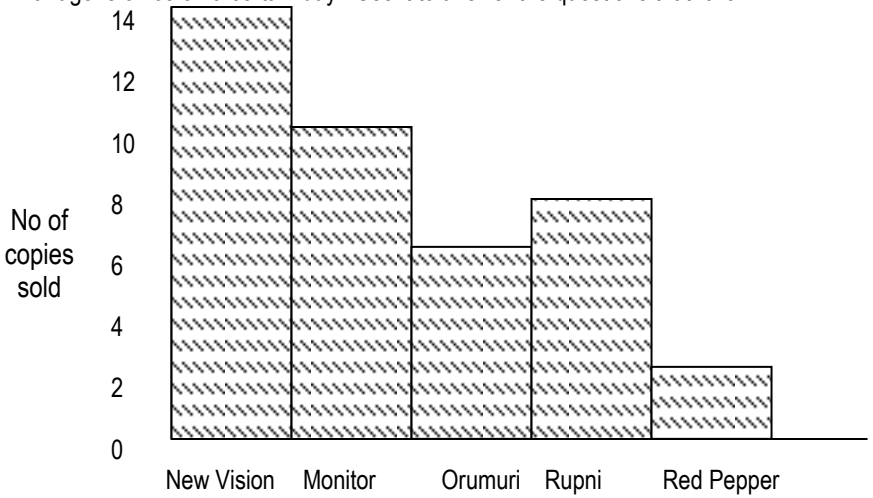
LESSON 2:

SUB TOPIC: BAR GRAPHS

CONTENT:

Example:

The bar graphs represents the copies of Newspapers which were sold to the Education Manager's office on a certain day. Use it to answer the questions that follow:



(a) Which Newspaper was sold in the biggest number?
(b) How many copies were sold altogether?
(c) Which newspaper was bought by the least number of people?
(d) How many more copies of New Vision were sold than the Red Pepper?

EVALUATION ACTIVITY:

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A New MK Primary Mathematics Bk 7 exercise 10:2 Pg 147

Remarks:

LESSON 3:

SUB TOPIC: BAR GRAPHS

CONTENT: Using given data to draw bar graphs

Example:

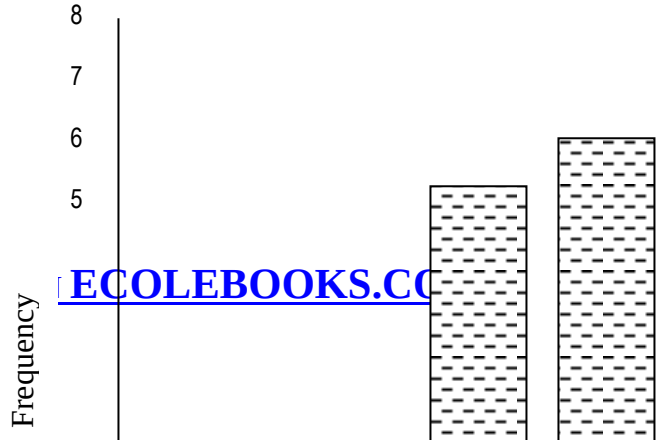
1. The table below represents points scored by 30 players.

Points scored	0	1	2	3	4	5
Frequency	2	3	5	6	9	5

Frequency table:

No	Tallies	Frequency
0	//	2
1	///	3
2	/////	5
3	//// /	6
4	//// ////	9
5	////	5

A bar graph to represent the above information:



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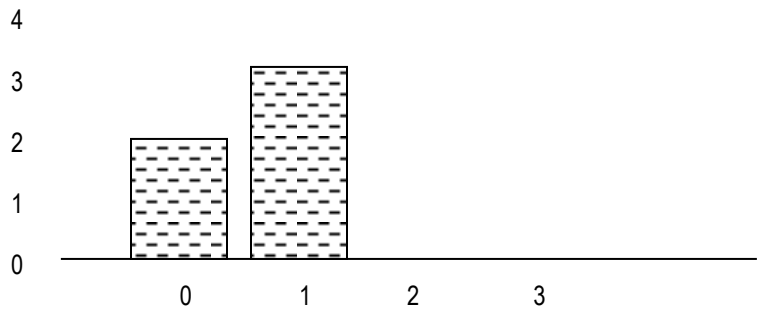

Points scored

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 149 exercise 10:3

Remarks:

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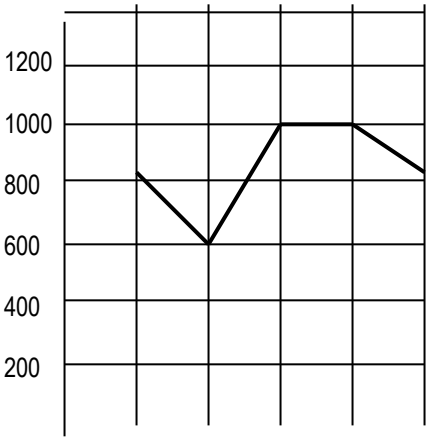
LESSON 4:

SUB TOPIC: **LINE GRAPHS**

CONTENT:

Example: The graph represents the schools' daily attendance for a week.

Use the information on the graph to make a table showing the daily attendance.



(i) On which day was the attendance very poor?
(ii) On which day was the attendance 600?
(iii) How many pupils attended on Wednesday?
(iv) What was the average attendance that week?
(v) How many more pupils attended on Wednesday than Tuesday?

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 10:4 Pg 150

Remarks:

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LESSON 5:

SUB TOPIC: **TEMPERATURE GRAPHS**

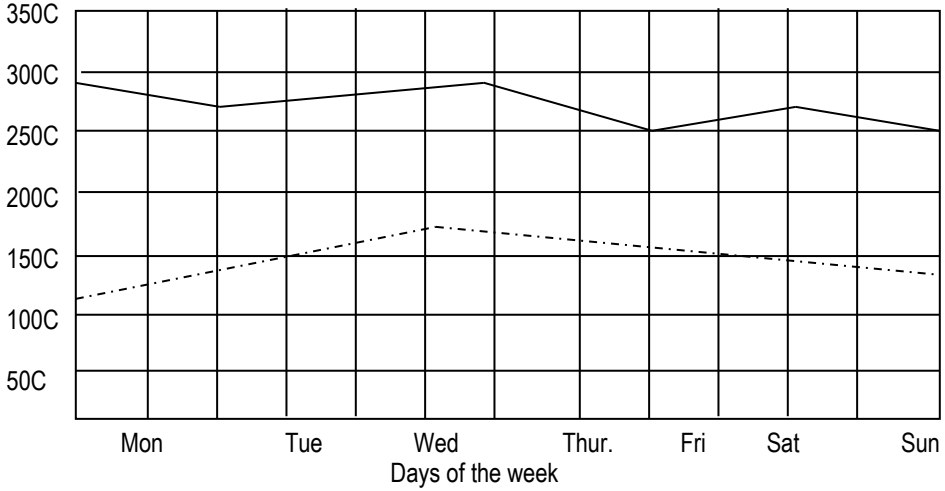
CONTENT: Interpreting temperature graphs

Example:

Study the table below:

Days	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Maximum Temp	28^0C	27^0C	29^0C	30^0C	26^0C	29^0C	27^0C

The same information can be represented on the graph as shown below.



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- - - - Minimum temperature
_____ Maximum temperature

(a) What was the highest temperature of the week?
(b) Which day was the minimum temperature?
(c) What was the median for the maximum temperature?

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 10:11 Pg 165

Remarks:

_____

_____

LESSON 6:

SUB TOPIC: TRAVEL GRAPHS

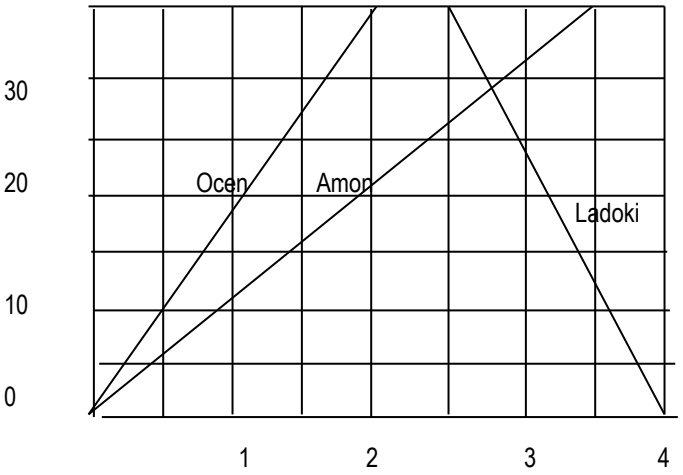
CONTENT:

A travel graph is one which shows the distance traveled and time taken.

Time is shown on the horizontal axis and distance is shown on the vertical axis.

Example:

The graph below shows 3 people moving between Kampala and Mpigi



1. What is the scale on the horizontal axis.
2. What is the scale on the vertical axis?
3. Find the average speed of each person.
4. Who is moving all the highest speed?
5. Where was Amon after 2 ½ hours?
6. How many hours did Amon take to complete her journey?
7. Where was Ladoki after 2 hours?
8. Where did Amon meet Ladoki
9. How many hours earlier did Ocen arrive at Mpigi before Amon?
10. How long did Ocen take to cover 30km?

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 12:9 Pg 185

Remarks:

_____

_____

LESSON 7:

SUB TOPIC: DRAWING TRAVEL GRAPHS

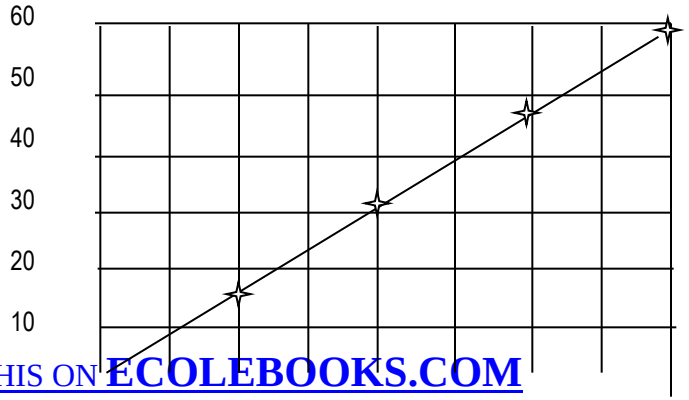
CONTENT:

Example:

Mukasa covered a journey in 4 hours traveling at 15 K.P.H. Show the journey on the grid.

KM	0 +15	15km +15	30km +15	60km
Time	0 +1	1 hr +1	2hrs +1	4 hrs

A graph representing Mukasa's journey.



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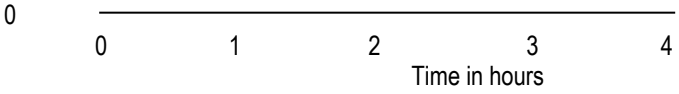


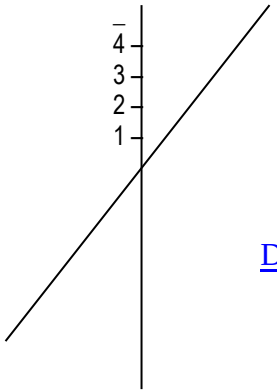
EVALUATION ACTIVITY:

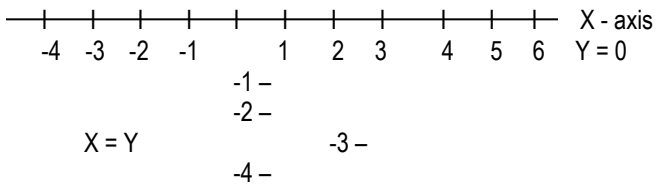
A New MK Primary Mathematics Bk 7 exercise 10:14 Pg 173 - 174

Remarks:

LESSON 8:
SUB TOPIC: **COORDINATE GRAPHS**
Example:
Plot the following points
A = (-1, 4)
B = (5, 4)
C = (5, 0)
D = (-1, 0)
Join the points name the figure formed and find its area.
2. P = (-2, 3) Q = (2, 3) R = (3, -2) S = (-4, -2)
Join the points, name the figure formed and find its area.
EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exercise 10: 20 Pg 183
Remarks:

LESSON 9:
SUB TOPIC: **GRAPHS OF EQUATIONS**
CONTENT:
Example:
1. Given that x = y. Complete the table.
(a) Draw a graph for the equation.





2. 2x = y
3. y = x + 4
4. y = 2x – 1

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exercise 10:22 Pg 182
Remarks:

LESSON 10:

SUB TOPIC: **GRAPHS OF EQUATIONS**

CONTENT: Complete the table of the given equation
Example:
If 2x + y = 10. Complete the table.

X = o	x = 1	x = 3
2x + y = 10	2x + y = 10	2x + y = 10
2x0 + y = 10	2x1 + y = 10	2x3 + y = 10
0 + y = 10	2 + y = 10	6 + y = 10
Y = 10	2 – 2 + y = 10 – 2	6 – 6 + y = 10 – 6
	Y = 8	Y = 4

X = 2
2x + y = 10
(2 x 2) + y = 10
4 + y = 10
4 – 4 + y = 10 – 4
Y = 6

EVALUATION ACTIVITY:

1. Y = 2x – 1 Complete the table.

X	0	1	2	3	4
y					

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2. Complete the table y = 3x – 5

X	4	___	1/3	___	3
Y	____	-2	___	-8	___

3. 3x + y = 5 Complete the table

X	0	1	2	___	6	___
Y	5	___	___	7	___	3

Remarks:

_____

_____

LESSON 11:

SUB TOPIC: LINES FORMED BY ORDERED PAIRS ON A GRAPH

CONTENT: Example:

1. Line A in the graph passes through (3 -3), (-2, -2) (-1, -1), (0, 0), (1, 1), (2, 2), (3, 3), etc
The table shows the x and y coordinates from line A.

X	-3	-2	-1	0	1	2	3
Y	-3	-2	-1	0	1	2	3

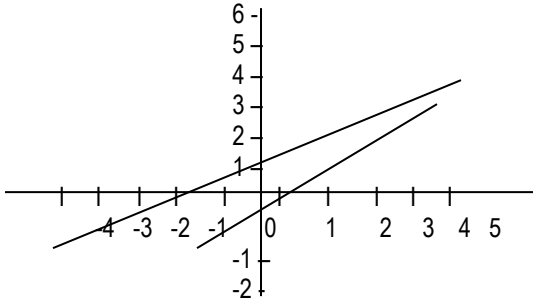
In comparison x coordinates are equal to the y coordinates
Y = x
The equation of line A is Y = x

2. Line B passes through (-3, -2), (-2, -1), (-1, 0), (0, 1), (1, 2), (2, 3), (3, 4), etc

X	-3	-2	-1	0	1	2	3
Y	-2	-2	0	1	2	3	4

Y = x + 1
-2 = -3 + 1
-1 = - 2 + 1
0 = -1 + 1
1 = 0 + 1
2 = 1 + 1
3 = 2 + 1

The equation for line B is y = x + 1
Represent the above lines on a coordinate graph



EVALUATION ACTIVITY:
MK Bk 7 Pg 185 exercise 10:21
Remarks:

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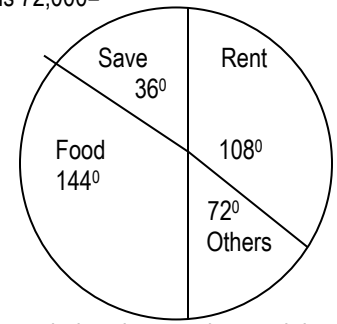
LESSON 12:

SUB TOPIC: PIE CHARTS

CONTENT:
Example:

1. The pie chart below shows the monthly expenditure and savings of Mr Mugisha who earns 72,000=



(a) How much does he spend on each item?
(b) Change the given degrees to percentages.

2. The pie chart below shows a man's expenditure and savings if he earns 10,800=

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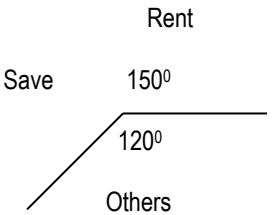


(a) How much does she spend on rent?
(b) Express the savings as a percentage of the total.
(c) How much more does he spend on other than he saves.

EVALUATION ACTIVITY:
MK Bk 7 Pg 192 exercise 12:11

Remarks:

_____

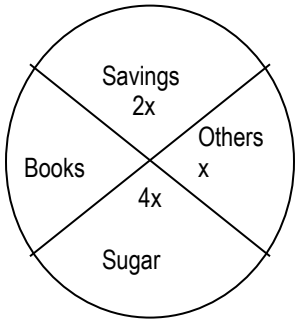
_____

LESSON 13:

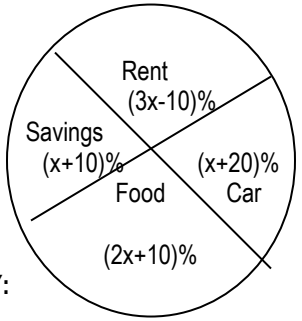
SUB TOPIC: PIE CHARTS

CONTENT:
Example:

1. Mukasa was given 12,000= for his pocket money and spent it as shown on the pie chart below.
   (a) Find the value of x in degrees.
   (b) How much does he spend on each item?



2. With unknown percentage. A circle graph shows the expenditure and savings of a family which earns 96,000= How much is spent on a car and rent?



EVALUATION ACTIVITY:

MK Bk 7 195 exercise 12:12

Remarks:

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LESSON 14:

SUB TOPIC: CONSTRUCTION OF PIE CHARTS

CONTENT:
Example:

1. Mukiibi spent 70% of his salary on rent 50% of the remainder on others. He was left with 3,000=
   (i) What did he have at first?
   (ii) Draw a pie chart using the information above.
2. The table below shows how Mr Mwanje spends his salary.

Items	School fees	Food	Transport	Others	Car expenses
Percentages	15%	20%	X%	10%	15%

   (i) Calculate the value of x.
   (ii) If he spends 60,000 on others, calculate his salary.
   (iii) Draw a pie chart to represent the information above.

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EVALUATION ACTIVITY:

MK Bk 7 196 - 197 exercise 12:12

Remarks:

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LESSON 19:

SUB TOPIC: STATISTICS

CONTENT: Mode, medium, range and mean

Example:

1. The table below represents the goals scored by different teams.

Goals scored	2	3	6	7	10
Number of teams	4	1	2	1	2

   (a) Find the mode score.
   (b) What was the modal frequency?
   (c) Calculate the medium
   (d) Calculate the mean and range.

2. Find the medium of the following scores 3, 1, 2, 0, 6, 1, 4

EVALUATION ACTIVITY:

MK Bk 7 Pg 156 exercise 10:7

Remarks:

_____

_____

LESSON 20:

SUB TOPIC: COMPLEX AVERAGE/INVERSE OF AVERAGE

CONTENT:

Example:

The average of 4 boys in a group is 12 years. A young boy os 4 years joined the group. Find the average age of the 5 boys.

$$\text{Mean} = \frac{\text{Total}}{\text{Number of boys}}$$

Total age of 4 boys = Mean age x number of boys
= 12 x 4
= 48

$$\text{Mean age of 5 boys} = \frac{\text{Sum of ages}}{\text{Number of boys}} = \frac{48 + 4}{5} = \frac{52}{5} = 10\ 2/5$$

The mean age of the 5 boys = 10 2/5 years.

Example 2:

The average mark of 36 pupils in a class is 5. Two pupils whose marks are 20 and 24 leave the group. Find the average mark of the remaining pupils.

EVALUATION ACTIVITY:

Macmillan Primary Maths Bk 7 Pg 148 exercise 12

Remarks:

_____

_____

TOPICAL EXERCISE ON GRAPHS

1. Hamisa kept the following daily record of the number of people who visited their home in a week: 3, 5, 3, 2, 0, 3, 5. Find the mean.
2. A die is rolled once. What is the probability that a composite number will show on top?
3. The average height of Peter, James and John is 51cm. If the height of Peter is 53cm and that of James is 46cm Find the height of John.
4. Mary kept the following record of rainfall in centimeters 4, 3, 6, 5, 3, 0. Find the mode.
5. a FOOT BALL TEAM CAN WIN, DRAW OR LOSE A March. What is the probability that it will win a March?
6. The mean of the scores: 8, 7, 6, 5, (a – 5) is 6
   (a) Find the value of a.
   (b) Find the range of the scores.

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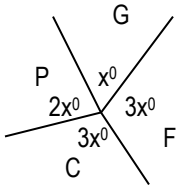
7. Sumaya scored the following marks in her homework exercises: 2, 5, 7, 3, 10, 4, 7, 11, 8, 3
   (a) Find her median mark
   (b) Find the mean mark
   (c) Find the probability that Sumaya scored a mark above her mean mark
8. The equation of a line is 2x + 1 = y. Make a table for the coordinates of x and y with the coordinates of x between -2 and +3. Show the line on a graph.
9. Given that x = 2y + 1 Complete the table below.

X	1	___	5	___	9
Y	____	1	____	3	____

10. (a) Draw a grid and plot the following points:
    (i) A (-4, 3)
    (ii) B (0, 3)
    (iii) C (2, -3)
    (iv) D (-4, -1)
    (b) Join the points A to B, B to C, C to D, D to A
    (c) Name the quadrilateral formed.
    (d) Find the area of the quadrilateral formed above.
11. Find the mean of x, 4, 2x, 6 and 2x.
12. What number is mid way of ½ and 1/3?
13. A cyclist traveled from town P to R as follows. For 2 hours, he cycled from P to town Q a distance of 30km and then rested for 1 hour from Q. He continued for another 1 hour to town R at a speed of 40km/hr.
    (a) Draw a travel graph to show his journey
14. Given that Y = 2x – 1
    (a) Complete the table below.

X	0	1	2	3	4	5
Y	-1	1	___	___	___	___

    (b) Plot the points given in the table above on a graph.
15. The average of 3, 5, 4, 7, 9, 5 and y is 5. Find:
    (a) the value of y
    (b) the median
    (c) the mode
16. The average speed of a car is 60km/hr for 30 minutes. What distance is covered?
17. The pie chart below shows how a farmer has divided his land. C is for cash crops, G is for grazing, F is for food crops and for other purposes . The land available is 720 hectares.



    (a) How many hectares are left for grazing?
    (b) If he pays rent of shs 200 per hectare per year, how much will he pay for land reserved for cash crops?
18. In a Mathematics test given to a class, the marks scored frequency and total marks scored are shown in the table below.

Marks scored	Frequency	Total marks
4	4	16
____	9	45
6	____	84
7	8	____
9	5	45

    (a) Complete the table
    (b) What was the mode?
    (c) How many pupils were in the class?
    (d) What was the average mark scored?
19. Study the frequency table and answer the questions that follow:

Marks scored	20	40	70	50
No. of children	2	3	1	1

    (a) How many pupils did the test?
    (b) Find their mean mark.
    (c) Calculate their median mark.
    (d) What was the modal mark.
    (e) Workout the range
20. When two dice are tossed, what is the probability of even numbers showing on top?

TOPIC 8 GEOMETRY
LESSON 1:

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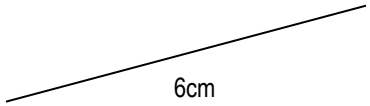
SUB TOPIC: **LINES ((MEASURING, DRAWING AND CONSTRUCTING)**

CONTENT: Review:

- Measuring line segments
- naming line segments (AB)
- types of lines
- (Parallel, not parallel, intersecting, etc)

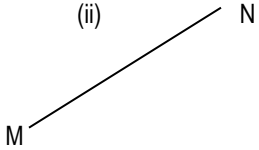
Drawing line segments:

1. Draw a line segment measuring 6cm.



2. Measure the following lines:

(i) (ii)



3. Construct the following line segments:

(i) AB = 7.5cm (ii) DE = 8.3cm (iii) TB = 3.2cm

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Trial exercise Pg 287 (New Edition)

Remarks:

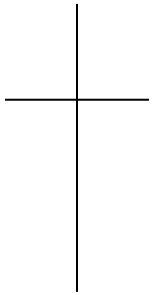
LESSON 2:

SUB TOPIC: **LINES (BISECTING LINES)**

CONTENT: Steps to follow

Dropping perpendicular lines given points.

Drop a perpendicular line from point X to meet line AB



Drop a perpendicular line from point t.

EVALUATION ACTIVITY:

Pupils will bisect lines and drop perpendicular lines from points to meet known line segments.

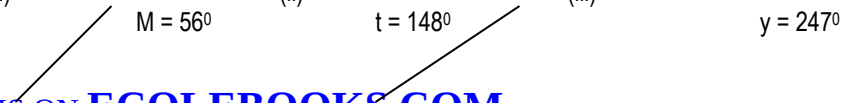
Remarks:

LESSON 4:

SUB TOPIC: **MEASURING AND DRAWING ANGLES**

CONTENT: Measure the size of angles below.

(i) (ii) (iii)



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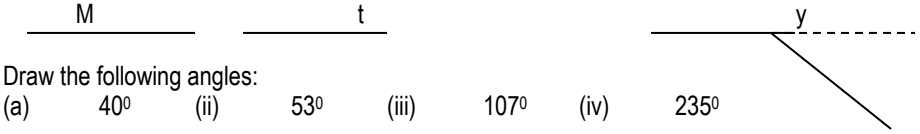


Draw the following angles:
(a) 40^0 (ii) 53^0 (iii) 107^0 (iv) 235^0

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Exercise 28:9 28:10, 28:11 Pg 277 - 279 (New Edition)

Remarks:

LESSON 4:

SUB TOPIC: CONSTRUCTING ANGLES

CONTENT: Review bisecting angles

1. Construct the following angels:
   (a) 60 (b) 300

   (c) 750 60^0, 30^0, 15^0 75^0 150^0 120^0 165^0

2. (a) 90^0 (b) 45^0

(Use the very method to construct 90^0, 45^0, 135^0, 75^0, $22\frac{1}{2}^0$)

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Exercise 28:9 28:10, 28:11 Pg 277 - 279 (New Edition)

Remarks:

LESSON 6:

SUB TOPIC: CONSTRUCTING REFLEX ANGLES

CONTENT: Construct an angle of 2100

$210^0 = 180^0 + 30^0$

210

2100

3000

EVALUATION ACTIVITY:

Construct the following angels:

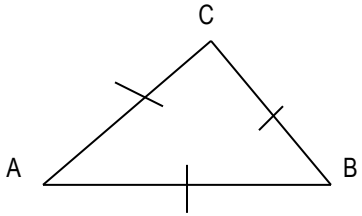
1. 225^0
2. 195^0
3. 240^0
4. 270^0

Remarks:

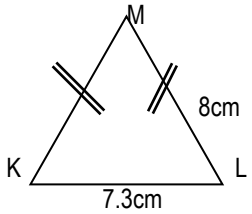
LESSON 7:

SUB TOPIC: CONSTRUCTING OF TRIANGLES SSA, SAS,, ASA

CONTENT: Construct an equilateral triangle ABC of side 6cm



Construct an isosceles triangle KLM in which KL = 7.3cm KM = LM = 8cm



EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7

Remarks:

LESSON 7:

SUB TOPIC: CONSTRUCTING TRIANGLES

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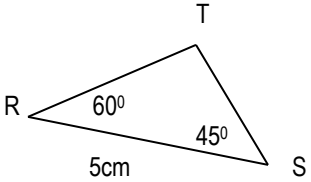
CONTENT: Construct a triangle RST where angle R = 600 angle S = 450 and RS = 5cm
Measure the length of ST and angle T.



T = 75⁰
Length of ST = 4.6cm
Drop a perpendicular line from point T to meet RS at point O, measure OT and work out the area. OT = 3.2cm

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 6 Exercise 28:25 Pg 301 (New Edition)

Remarks:

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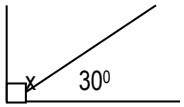
LESSON 8:
SUB TOPIC: ANGLES
CONTENT: Complementary angles

- An angle with 900 is called a right angle.
- Any two angles that add up to 900 are complementary angles.

Examples:

1. What is the complement of 300?
   Let the complement be x
   X + 30⁰ = 90⁰
   X + 30 – 30 = 90- 30
   x = 60



2. Find the complement of (x + 40)0
   Comp of (x + 40) ⁰
   = 900 – (x + 40) ⁰
   = 90⁰ – x + 40⁰
   = 90⁰ – 40⁰ – x
   (50 – x)⁰
3. What angle is ½ of its complement?

Let Y represent the complement
Y is ½ of (90 – y)0
Y = ½ (90 – y)
2y = (90 – Y) x 2
2
2y = 90 – y
2y + y = 90 – ~~y~~ + ~~y~~
3y = 90
3 3
Y = 30⁰

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 11:5 Pg 202-203 (New Edition)

Remarks:

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LESSON 9
SUB TOPIC: SUPPLIMENTARY ANGLES

CONTENT: Supplementary angles add up to 180⁰.
X + Y = 1800 (supp. S)
Examples:

1. In the above figure, if x = 48, find y.
   X + y = 180⁰
   Y + 48⁰ = 180⁰
   Y + 48⁰ – 48⁰ = 180⁰ – 48⁰
   Y = 132⁰
2. What angle is ¼ of its supplement?
   X = ¼(180⁰ – x)
   X = (180⁰ – x)
   4
   4x = (180⁰ – x) x 4
   4
   4x = 180⁰ – x
   4x + x = 180⁰ – ~~x~~ + ~~x~~
   5x = 180⁰
   ~~5~~x 5
   X = 36⁰

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3. What angle is 5 times its supplement?

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 11:56 Pg 204 (New Edition)

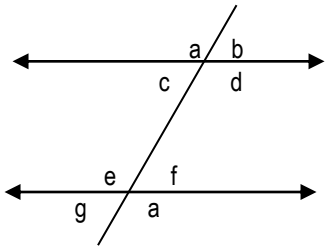
Remarks:

_____

_____

LESSON 10
SUB TOPIC: ANGLES ON PARALLEL LINES

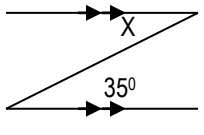
CONTENT: Properties of angles on parallel lines
Illustration:



a + b = 1800 (supp. ∠S)
a = d (vertically opp ∠S)
a = e (corresp ∠S)
d = h (“)
b = f “
c = F & d = e (att. Int ∠S)
a = h & b = g (Alt. ext. S)
c + e = 180^0 (co.int. S)
d + f = 180^0
a + g/b + h = 1800 (co.ext S)
a + b + c + d = 3600 (S at a point)

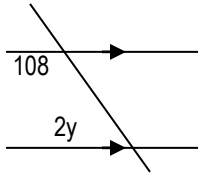
Examples:

(i)



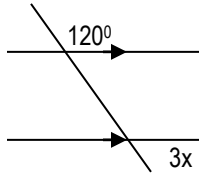
$X = 35^0$ (Alt, int ∠S)

(ii)



$2Y = 108^0$ (co.int ∠S)
$\frac{2y}{2} = \frac{108}{2}$

(iii)



3x = 1200 (co.etx ∠S)
$\frac{3x}{3} = \frac{120}{3}$

Y = 54^0 x = 40^0

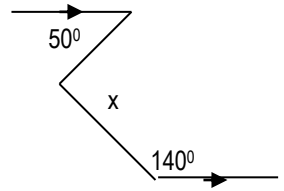
(iv)

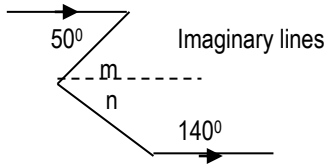
$(6x-20)^0 = (2x + 80)^0$ (veric.opp ∠S)
$(6x – 20)^0 = 2x + 80^0$
$4x = 100^0$
4x = 100
4 4
$X = 25^0$

$7x^0+3x^0+70 = 360^0$
∠S at a point
$10x + 70 = 360^0$
$10x + 70^0 – 70^0 = 360^0 – 70^0$
10x = 270
10x = 270
10 10
$X = 27^0$

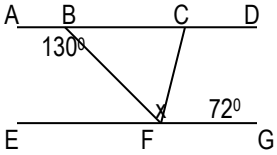
EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 13:10 Pg 216 - 218 (New Edition)
Mathematics Revision Handbook Bk 5 – 7 Pg 209 - 120

LESSON 11
SUB TOPIC: ANGLS ON PARALLEL LINES
CONTENT: More about angles on parallel lines
Examples:
1. Find the value of x.





Draw imaginary lines and rename the S.
M = 50^0 (Alt. int ∠S)
N + 140^0 = 180^0)Co. int. ∠S)
N+ 140^0 – 140^0 = 180^0 – 140^0
N = 40^0



∠ABF = ∠BFG (Allt. Int. ∠S)
X + 72^0 = 130^0
4 x 72^0 = 130^0 – 72^0
X - 58^0

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 11:11, 11:12, 12:6 Pg 213 (New Edition)

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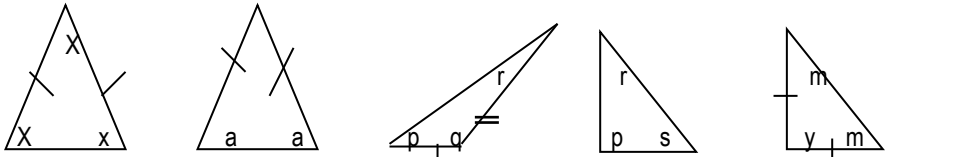
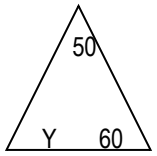
Remarks:

LESSON 12
SUB TOPIC: **ANGLES OF TRIANGLES**
CONTENT: Types of triangles and their angel properties.

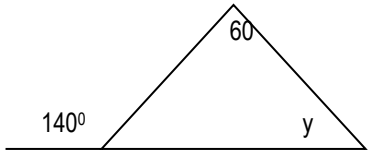


Equilateral — All ∠S are equal
Isosceles — Base ∠s are equal
Scalene — P ≠ r ≠ q
Right d scalene — P = 90
ed Isosceles — ∠y = 900 m = 45

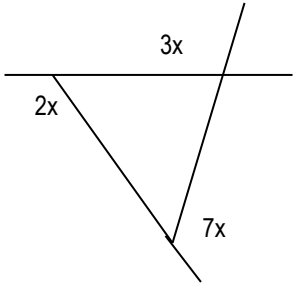
Examples:



Interior angle sum of a triangle
Y + 50 + 60 = 180 (sum of a triangle)
Y + 110 = 180
Y + 110 – 110 = 180 – 100
Y = 70



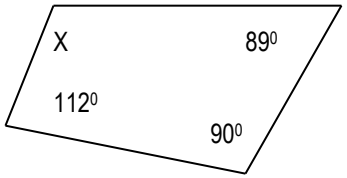
Interior and exterior angles of a triangle
Find the value of y.
Y + 60⁰ = 140⁰ (2 int. S = 1 opp ext)
Y + 60⁰ – 60⁰ = 140 ⁰– 60⁰
Y = 80⁰



Exterior angles of triangles
Find the value of x
2x + 3x + 7x = 360⁰
(sum of ext. S of any polygon)
12x = 360⁰
12x = 360
12 12
X = 30⁰

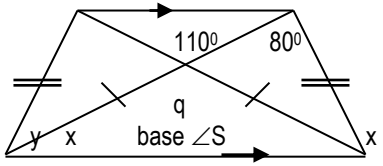
EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 12:1/12:2/12:3?12:4/12:5 Pg 229-235 (New Edition)

LESSON 13:
SUB TOPIC: **ANGLES OF QUADRILATERALS**
CONTENT: Angle properties of quadrilaterals
The interior angle sum of a quadrilateral is 360⁰.
Example:
(i)



x = 112⁰ + 90⁰ + 89⁰ = 360⁰
X + 291⁰ = 360⁰
X + 291⁰ – 291⁰ = 360⁰ – 291⁰
X = 69⁰

(ii)



q = 110⁰ (vert. opp∠S)
X + x + 110 = 180 (int ∠sum)
2x + 110⁰ = 180⁰ of)
2x + 110⁰ – 110⁰ = 180⁰ – 110⁰
2x = 70⁰
2x = 70⁰
2 2
X = 35⁰

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Pg 237-241 (New Edition)

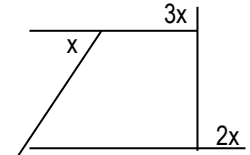
Remarks:

LESSON 14:
SUB TOPIC: **PROPERTIES OF REGULAR POLYGONS**

CONTENT: Exterior angles of polygons

- The number of centre, exterior or interior angles is equal to the number of sides.
- The centre angle is equal to the exterior angle in a regular polygon.
- Interior angle plus exterior angle is equal to 180.
- All exterior angles of a regular polygon add up to 360.

Examples:



2x +x + 10⁰+ 3x + x = 360⁰
7x + 10⁰ = 360⁰
7x + 10⁰ = 10⁰ = 360⁰– 10⁰
7x = 350⁰

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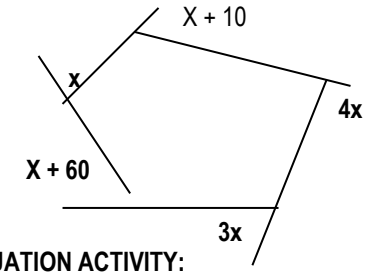
$X + 10^0$ 7 7

$X = 50^0$



$X + 4x + x + 10^0 + x + 60^0 = 360^0$
$7x + 70^0 = 360^0$
$7x + 70^0 - 70^0 = 360^0 - 70^0$
$7x = 270^0$
7 7
$X = 30^0$

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 Pg 242 – 244 (New Edition) Exercise 12:9

Remarks:

LESSON 15
SUB TOPIC: ANGLES OF REGULAR POLYGONS

CONTENT: Calculating the number of sides of a polygon

Examples:

1. Calculate the number of sides of a regular polygon whose exterior angle is 30.
   Solution:
   All ext S = 360^0
   Each ext angle = 30^0
   Numberof sides = all ext angles
   Each ext angle
   = $\frac{360^0}{30^0}$
   No of sides = 12 sides.
2. The interior angle of a regular polygon is 144. name the polygon.
   Let the ext angle be x.
   144 /x
   $X + 144^0 = 180^0$
   $X + 144^0 - 144^0 = 180 - 144$
   $X = 36^0$
   Exterior angle = 36^0
   No of side = All ext angles
   each ext angle
   360^0
   36^0
   = 10 sides
   The polygon is a decagon
3. The interior angle of a regular polygon is 90^0 more than the exterior angle.
   (a) Calculate the exterior angle
   (b) How many sides has the polygon?
   Solution:
   Let the ext. angle be x
   Int angle $x + 90^0$
   Ext. angle x
   $X + 90^0 + x = 180^0$
   $2x + 90^0 - 90^0 = 180^0 - 90^0$
   $\frac{2x}{2} = \frac{90}{2}$
   $X = 45^0$
   ext. angle = 45^0
   No of sides = All ext angles
   each ext angle
   $\frac{360^0}{45}$
   = 8 sides

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 Pg 246 - 249(New Edition) Exercise 12:12

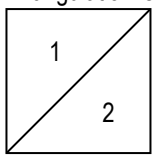
Remarks:

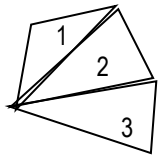
LESSON 16:

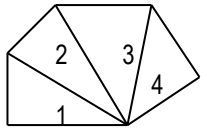
SUB TOPIC: ANGLES OF POLYGONS

CONTENT: Triangulation

Triangulation is forming triangles in a polygon.







Quadrilateral Pentagon Hexagon

Polygon	Number of sides	Number of triangles
Quadrilateral	4	4 – 2 = 2 triangles
Pentagon	5	5 – 2 = 3 triangles
Hexagon	6	6 – 2 = 4 triangles
Septagon	7	7 – 2 = 5 triangles

Examples:

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1. How many triangles can be formed in a polygon with 8 sides?
   No of triangles = n – 2
   = 8 – 2
   = 6 triangles
2. If 10 triangles can be formed ina regular polygon, find the number of sides of the polygon.
   No. of triangles = n – 2
   = n – 2 = 10
   = n – 2 + 2 = 10 + 2
   = n = 12 sides

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Pg 237-250 (New Edition) Exercise 12:13

Remarks:

LESSON 17

SUB TOPIC: **THE SUM OF INTERIOR ANGLES OF A REGULAR POLYGON**

CONTENT: Polygon
Examples:

1. The interior angle of a regular pentagon is 108. Calculate the sum of all interior angles of the polygon.
   Solution:
   A pentagon has 5 sides.
   Each int angle = 108
   The sum of interior angles = 108 x 5
   = 540^0.

2. Calculate the interior angle sum of a regular polygon with 7 sides.
   Solution:
   Int angle sum = 180 (n-2)
   180 (7 – 2)
   = 180 x 5
   = 900^0

3. Each exterior angle of a polygon is 30. Calculate the sum of the interior angles of a polygon.

All etx. S	The sum of int S
Each ext	180^0 (n – 2)
301	180^0 (12-2)
30	180 x 10
= 12 sides	= 1800^0

4. The sum of interior angles of a regular polygon is 1440.
   (a) How many sides has the polygon?
   (b) What is the size of each exterior angle of the polygon?

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Pg 252 - 257 (New Edition) Exercise 12:16/12:17/12:18

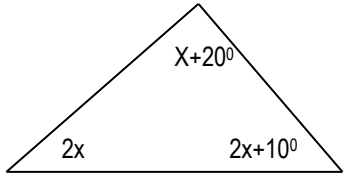
Remarks:

LESSON 18:

SUB TOPIC: **MORE ABOUT INTERIOR ANGLE SUM OF POLYGONS**

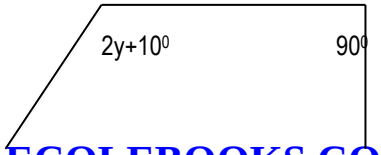
CONTENT: Examples

1. Find the value of x in the figure.



Sum of int S of triangle = 180^0
$X + 20^0 + 2x + 2x + 10 = 180^0$
$5x + 30^0 = 180^0$
$5x + 30^0 – 30^0 = 180^0 – 30^0$
$5x = 150^0$
$\frac{5x}{5} = \frac{150^0}{5}$
$= 30^0$

2. Find the value of y.



$2y + y + 10 + 2y + 10 + 90^0 = 360^0$
$2y + y + 2y + 10 + 10 + 90^0 = 360^0$
$5y + 110 = 360^0$
$5y + 110 – 110 = 360^0 – 110$
$\underline{5y} = \underline{250^0}$

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$\frac{2y}{y+10^0} = \frac{5}{5}$

$= y = 50^0$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Pg 258 (New Edition) Exercise 12:19

Remarks:

LESSON 19
SUB TOPIC: **CICUMSCRIBING AND INSCRIBING TRIANGLES**

CONTENT: A triangle PQR is equilateral. Each side measures 5cm using a ruler and a pair of compasses only, draw a circle around the triangle.

Steps for circumscribing:
- Construct a triangle PQR of side 5cm.
- bisect any 2 of the sides.
- Identify the centre of the circle as the meeting point of the 2 bisectors.
- draw a circle around touching the vertices of the triangle

Inscribing:
Steps:
- Construct a triangle
- bisect any 2 of the angles.
- Identify the centre of the circle as the meeting point of the circle.
- Draw the circle inside touching all the sides of the triangle.

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 Exercise 13:7Pg 212 & Pg 214 exercise 13:8(New Edition)

Remarks:

LESSON 20
SUB TOPIC: **CONSTRUCTION OF REGULAR POLYGONS OF GIVEN RADII OR LENGTH OF SIDE**

CONTENT: Constructing regular polygons with given radii

- Sketch the polygon.
- Calculate the centre angle.
- Draw a circle of the given radius
- Draw the radius line
- Measure and draw the centre angle
- Mark the points of intersection of angle arms to circumference A and B respectively.
- Open the pair of compasses along are AB and use the pair of compasses to mark off other arcs. (name the arcs C,D,E)
- Join the adjacent points BCDEA to form the polygon.

Constructing regular polygon when given length of its side.
- Construct a line segment of the given length.
- Determine the base angles and draw them at both points of the line segment.
- Draw a circle through the points on the line segment.
- Open the pair of compasses to the radius of the line segment continue to draw arcs on circumference.
- Join the adjacent points to form a figure/polygon.

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 Pg 314 - 315 (New Edition)
Remarks:

LESSON 21
SUB TOPIC: **CONSTRUCTION OF QUADRILATERALS (SQUARE, RECTANGLE, RHOMBUS & PARALLEGRAM)**

CONTENT: Square & rectangle

Constructing square PQRS of side 4cm.
- Draw sketch of the square to be constructed.
- Draw line PQ = 4cm
- Through point P construct a line perpendicular to PQ.
- With the centre P and radius PQ, make an arc on the perpendicular line cutting it at points.
- With centre S and Q and with the same radius make arcs to cut each other at R.
- Join SR and QR

Constructing of rectangles ABCD of length 7cm and width 4cm:
- Draw a sketch of the rectangle ABCD
- Draw line AB = 7cm
- At A construct a line perpendicular to AB.

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- Place the compass at A and with a radius of 4cm make an arc on the perpendicular cutting it at point D.
- Place the compass at B and with the same radius make an arc above AB.
- With a radius of 7cm, place the compass at D and make an arc to cut the previous arc at point C
- Join DC and BC

EVALUATION ACTIVITY:

Maths Revision Hand Book Pupils Bo 5, 6, and 7 Pg 264.

Remarks:

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LESSON 22
SUB TOPIC: CONSTRUCTION OF RHOMBUS AND PARALLELOGRAM

CONTENT: Construction of a rhombus
Example:
Using a ruler and a pair of compasses only, construct a rhombus ABCD of side 5cm and angle ABC 60^0.
Steps:

1. Draw a sketch
2. Draw line BC = 5cm
3. Construct an angle of 600 at B and mark line AB = 5cm.
4. With centres A and C and with the same radius 5cm, mark arcs to cut each other at D.
5. Join A to D and C to D.

Construction of parallelogram:

6. Draw a sketch of the parallelogram
7. draw line ST = 6cm
8. Construct an angle of 600 at S and mark off 4cm at R.
9. With centre T and radius line ST.
10. With centre R and radius equal to ST draw an arc to cut the first arc at U.
11. Join TU and RU to form the required parallelogram

EVALUATION ACTIVITY:

Maths Revision Hand Book Pupils Bo 5, 6, and 7 Pag 267-269.

Remarks:

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LESSON 23
SUB TOPIC: DIRECTION, BEARING AND SCALE DRAWING
Review clockwise and anticlockwise.
Complete rotation/turn/revolution is 360^0.

- **Angles covered by a minute hand on a clock face.**
- **Turns and angles and the vise versa**
- **Angle son compass**

Example:
Find the angle made in each of the following:

(a) 3 rotations
1 rotation = 360^0
3 rotations = 3600 x 3
= 1080^0

(b) 1 ½ turn
1 turn = 360^0
1 ½ turn = 1 ½ x 3600
3/2 x 360
3 x 180^0
= 540^0

(c) What angle does a minute hand turn in:
(i) 10 minutes
Complete turn of a minute hand is 60 minutes
and 3600
60 minutes = 360
1 minute = $\frac{360}{60}$
10 minutes = $\frac{360 \times 10}{60}$
= 6 x 10
= 60^0

(b) What is the smaller angle between North and East

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 333 - 334 & 335 exercise 18:1

Remarks:

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LESSON 24

SUB TOPIC: ORDINARY BEARING (DIRECTION)

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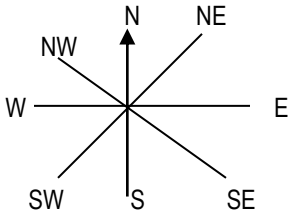
CONTENT: Direction and angles made by clockwise and anti clock wise turns

Example:

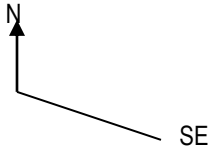
In which direction will 1 face if 1 turned anti clock wise through an angle of 1350 from South.

Solution:



I will face NE direction.

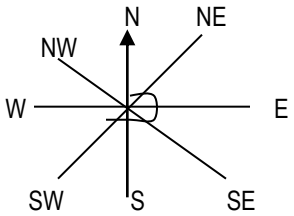
- State the angle made through the following turns.



- A boy was facing North. He turned clockwise to face SW. what angle did he make?

$45^0 + 45^0 + 45^0 + 45^0 + 45^0 = 225^0$

From North to SW clockwise he turned through 225^0.



EVALUATION ACTIVITY:

A New MK P.6 Maths Pupils Bk 7 (New Edition) Pg 288 – 289 Exercise 15:3 and 15"4

Remarks:

_____

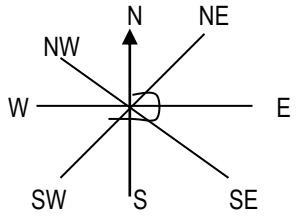
_____

LESSON 25

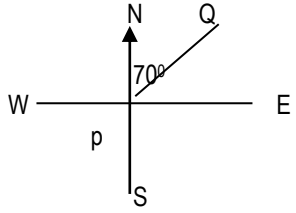
SUB TOPIC: ORDINARY BEARING (DIRECTION)

CONTENT:

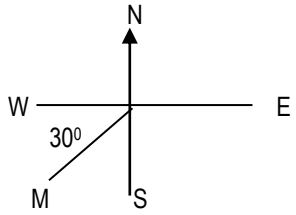
Example:



What is the bearing of Q from P?



The direction of Q from P is N 70^0E



$90^0 - 30^0$

$= 60^0$

Direction of M

M is 70^0 West of South

S 70^0W

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 290 exercise 15:5

Remarks:

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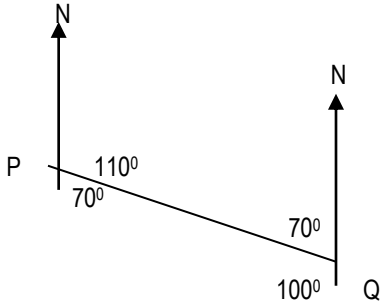
LESSON 26
SUB TOPIC: **MORE ABOUT ORDINARY BEARING**
CONTENT: Find the direction of Q from P and P from Q using the figure below.

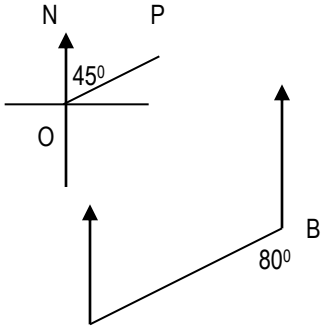


The direction of Q from P is S 70⁰E
The direction of P from Q is N 70⁰W.

EVALUATION ACTIVITY:
A New MK Primary Maths Pupils Bk 7 Pg 292 exercise 15:6

Remarks:

LESSON 16
SUB TOPIC: **TRUE BEARING**
CONTENT:
Example:
True bearing is measured from North in clockwise direction.
Angles less than 100⁰ must be written in 3 digits without letters N., S, E or W.



Bearing of P from O is O 45⁰.

Bearing of B from A is 080⁰

80⁰
A

Bearing of A from B is 180⁰ + 80⁰
= 260⁰

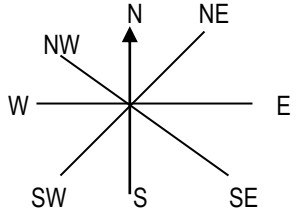
EVALUATION ACTIVITY:
A New MK Primary Maths Pupils Bk 7 Pg 295 - 296 exercise 15:9 & 15:10

Remarks:

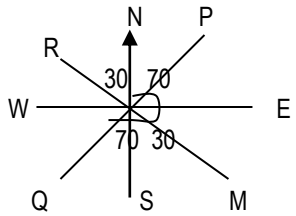
LESSON 17

SUB TOPIC: **OPPOSITE DIRECTIONS AND BEARING**

CONTENT: Opposite direction



Opp of NE is W
Opp of W is E
Opp of SE is NW



Point P is N 70⁰ E opp. to Q (S 70⁰W)
Point R is N30⁰ W opp. to M (S30⁰E)

EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 293 - 294 exercise 15:7

Remarks:

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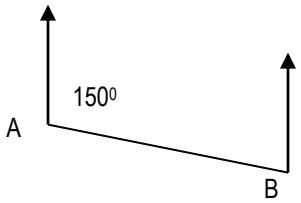
LESSON 18
SUB TOPIC: **OPPOSITE BEARING**
CONTENT: Table showing opposite bearing

Bearing	Opposite bearing
045^0	225^0
090^0	270^0
135^0	315^0
225^0	045^0

Examples:

1. If the bearing P from Q is 0606. what is the bearing f Q from P?
   Solution: Bearing of Q from P (Opposite bearing)
   = $060^0 + 180^0$
   = 240^0
2. The bearing of A from B is 2700. Find the bearing of B from A.
   Bearing of B from A (Opposite bearing)
   = $270^0 - 180^0$
   = 09^{00}



Bearing of A from B (Opposite bearing
= $150^0 + 180^0$
= 330^0

EVALUATION ACTIVITY:

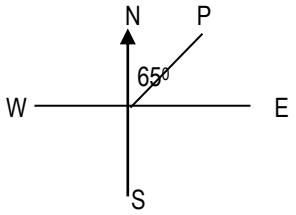
A New MK Primary Maths Pupils Bk 7.

Remarks:

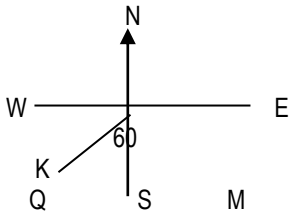
LESSON 19
SUB TOPIC: **DIRECTION AND BEARING**

CONTENT:

Bearing	Opposite bearing
North	000^0 or 360^0
East	090^0
South	180^0
West	270^0
NE	045^0
NW	315^0



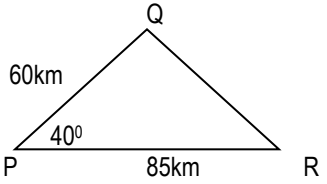
Direction of P from O
is N65^0 E
Bearing is 065^0



Direction is S60W
Bearing is $60^0 + 180^0 = 240^0$

EVALUATION ACTIVITY:
A New MK Primary Maths Pupils Bk 7 Pg 299 exercise 15:11.
Remarks:

LESSON 20
SUB TOPIC: **SCALE DRAWING**
CONTENT:
Construct the figure below using scale drawing.



Scale: 1cm represents 10km

Actual length	Drawing length

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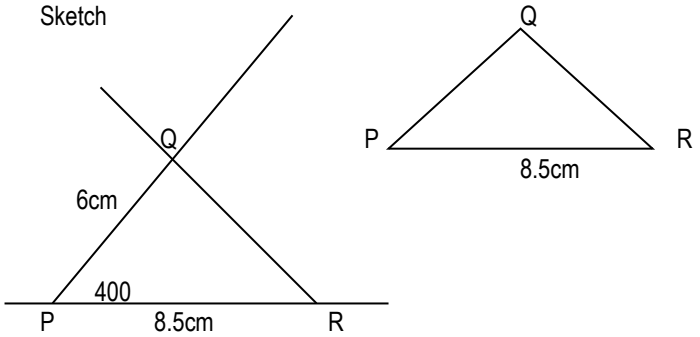
60km	$^{60}/_{10}$ = 6cm
85km	$^{85}/_{10}$ = 8.5cm

Sketch



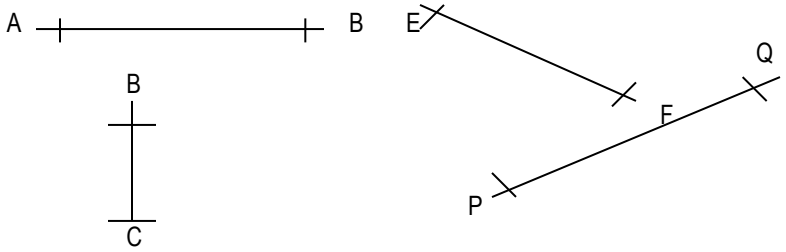
EVALUATION ACTIVITY:

A New MK Primary Maths Pupils Bk 7 Pg 304 exercise 15:5

Remarks:

TOPICAL REVISION QUESTIONS:

1. Using a ruler measure the following lines segments in cm.



2. With the help of a ruler and pair of compasses only, construct the following angles.
   (a) 30^0
   (b) 45^0
   (c) 75^0
   (d) 120^0
3. Construct using a ruler and pair of compasses only the triangles with the following measurement.
   (a) Triangle ABC where AB = 7cm, AC = 6cm and BC = 5cm
   (b) Triangle PQR where PQ = 8cm, ∠Q = 120 and QR = 5cm. Measure PR
4. What is the smaller angle between West and South West.
5. The bearing of a village P from town K is 049. What is the bearing of town K from village P.
6. Construct a square WXYZ whose sides are 4.5cm.
7. Each interior angle of a regular polygon is 120.
   (i) Find the number of sides of the polygon.
   (ii) Calculate its interior angle sum.
8. How many degrees will Munduni turn through in 3 ¼ revolutions?
9. Town B is 60km South of town A and town C is 80km East of town B. Draw an accurate diagram for the 3 towns and measure the shortest distance between A and C

TOPIC

TOPIC: **MEASURES**
LESSON 1:
SUB TOPIC: **TIME**
CONTENT: Changing seconds to minutes and hours and vice versa

Examples:

1. Change 3600 sec to minutes and hours.

Solution: $60\overline{)3600}$ (60)

60 minutes

60 seconds = 1 minute

Change 60 minutes to hours

1 hour = 60 minutes

$60\overline{)60}$ (1 hr.)

= 1 hour

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 17:1 Pg 324 (New Edition)

Remarks:

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LESSON 2:
SUB TOPIC: **TIME**
CONTENT: Conversion of 12 hour time in 24 hour time
Use a conversion time table (A New MK Pg 411)
Example

1. Change 2:00am to 24 hour clock
   Solution: 2:00
   +00:00
   _____
   02:00 hrs
   _____

2. Change 8:30pm to 24 hour lock
   Solution: 8:30
   +12:00
   _____
   20:30 hrs
   _____

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:3 Pg 412 (New Edition)

Remarks:

_____

_____

LESSON 2
SUB TOPIC: **TIME**
CONTENT: Changing 24 hour clock to 12 hour clock
Example

1. Write 0436 hrs in the 12-hour clock
   Solution: 0436
   -0000
   _____
   4:36 = 4:36am
   _____

2. Write 2310 hrs in the 12-hour clock time
   Solution: 2340
   -1200
   _____
   11:40 = 11:40pm
   _____

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:3 Pg 413 (New Edition)

Remarks:

_____

_____

LESSON 4
SUB TOPIC: **TIME**

CONTENT: Finding duration
Example

1. A bus left Nairobi at 1315 hours and arrived in Kampala at 1630 hrs. How long did the journey take?
   Subtract: 1630 hrs
   - 1315 hrs
   _____
   3 15hrs
   _____

2. A party started at 2000hrs and ended at 11:30 How long did the party last?
   (Express 11:3pm in 24 hr-clock)

11:3pm	Then subtract	23300hrs
+12:00hrs		-2000hrs
_____		_____
2330 hrs		3hrs :30minutes
_____		_____

The party lasted for 3 hours and 30 minutes.

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:5 Pg 414 (New Edition)

Remarks:

_____

_____

LESSON 5
SUB TOPIC: **TIME**

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CONTENT: School Time Table

Example:

1. Study the time table below for a P.6 class in Kyebando Primary School and answer the questions that follow.

From	8:30 am	9:10 am	9:50 am	10:30 am	11:10 am	11:50 am	12:30 pm	2:00 pm	2:40 pm
To	9:10	9:50	10:30	11:10	11:50	12:30	2:00	2:40	3:20
Mon	MTC	Eng		PAPE	PAPE	R.E		PAPE MDD	PAPE MDD
Tue.	Sci	MTC		R.E	R.E	Eng		SST	SST
Wed.	SST	Eng		IPS	Sci	Sci		Eng	Eng
Thur	Eng	Sci		MTC	MTC	L.Lag		R.E	MTC
Fri	MTC	MTC		Swah	Eng	Sci		IPS	IPS

(i) How long does each lesson last?

9:10am (60 + 10) = 70 minutes

-8:30am -30

_____ _____

40 minutes

Each lesson lasts for 40 minutes

(ii) At what time does break end?

(iii) For how long do the pupils take studying Science the whole week?

5 lessons x 40 minutes = 200 minutes

3 rem 20 minutes

$60\sqrt{200}$

3 hours and 20 minutes.

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:6 Pg 415 (New Edition)

Remarks:

_____

_____

LESSON 6

SUB TOPIC: TIME

CONTENT: Taxi and bus time tables

Example

1. The table shows the departure and arrival time of a taxi at given stations. Study it and answer the questions that follow:

Station	Arrival	Depature
Tororo		6:00am
Iganga	7:30am	7:45am
Jinja	8:35am	8:50am
Kampala	10:50am	

(i) How long did the taxi take to move fro Tororo to Iganda?

Solution: Timeof arrival – Time of departure

Subtract 7:30am

- 6:00am

_____

1:30

_____

It took 1 hour 30 minutes

(ii) How long was the taxis stopover in Jinja?

Subtract 8:50am

- 8:35am

_____

0:15 = It was 15 minutes.

(ii) How long did the taxi take to move from Iganda to Kampala?

Subtract 10:50am

- 7:45am

_____

3:15

_____ It took 3 hours and 15 minutes

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:7 Pg 416 - 417 (New Edition)

Remarks:

_____

_____

LESSON 7

SUB TOPIC: TIME

CONTENT: Train timetables

Example

1. The tables below shows the departure, the arrival time and the fares for a train from Mityana to Tororo. Study the table carefully:

Station	Arrival	Departure
Mityana		11:00pm
Bujjuko	11:45pm	12:00 Mid night
Kampala	12:30am	12:45am

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Jinja	1:30am	1:40am
Iganga	2:10am	2:30am
Tororo	3:30am	

Table II:

Mty					
500	BJK				
1000	500	Kla			
1600	1100	1000	JNJ		
2600	2100	2000	1000	ING	
3600	3100	3000	2000	1000	TRR

(a) How long does the train take to move from Mityana to Kampala?

Solution: 12:30am
- 11:00pm
_____
1:30pm
_____ 1 hour and 30 minutes

(b) Three tourists boarded the train from Kampala to Iganga. How much did they pay?

Solution: Kampala to Iganga costs shs 2,000
3 tourist pay shs 2000
X 3
_____
Shs 6,000

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 21:8 Pg 418 - 419 (New Edition)

Remarks:
_____
_____

LESSON 8
SUB TOPIC: **TIME**
CONTENT: Marine timetables
Example

1. The table below describes the MV Victoria journey on the Island. Study it and answer the questions that follow:

Port		Day	Time	Fares (shs)
Port Bell (KP)	Dep	Wed	06:00	
Bukoba	Arrival	Wed	09:15	1500
	Dep	Wed	09:55	
Mwanza	Arrival	Wed	15:55	3000
	Dep	Wed	19:55	
Musoma	Arrival	Thurs	02:00	3000
	Dep	Thurs	04:00	
Kisumu Peir	Arrival	Thurs	14:00	5000

(i) How long does the steamer take to move from Port Bell to Mwanza?
Subtract 15:55
-06:00
_____
9:55 It takes 9 hours and 55 minutes

(ii) How long does the steamer take to move from Mwanza to Musoma?
Time moved on Wednesday + time moved on Thursday
24:00 – 19:55 = 4:05
It takes 4 hours and 5 minutes.

(iii) How much does it cost one to move from Mwanza to Kisumu Pier?
Mwanza to Musoma = 3000
Musoma to Kisumu Pier = +5000
_____
8000
One pays shs 8000 from Mwanza to Kisumu Pier

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 21:8 Pg 418 - 419 (New Edition)

LESSON 9

SUB TOPIC: **TIME**

CONTENT: Air timetables
Example

1. Below is part of Uganda Airlines timetable for daily flights between Entebbe, Soroti and Kasese. Use it to answer the questions which follow:

From	To	Flight	Departure	Arrival
Entebbe	Soroti	QU 740 QU 758	07: hours 17:00 hours	08:00 hours 18:00
Entebbe	Kasese	QU 702	07:00 hours	08:15 hours

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		QU 730	21:00 hours	22:15 hours
Kasese	Entebbe	QU 703 QU 731	07:00 hours 21:45 hours	08:15 hours 23:00 hours
Soroti	Entebbe	QU 741 QU 759	08:30 hours 18:30 hours	09:30 hours 19:30 hours

(a) How long does the flight from Entebbe to Soroti take?

Subtract 0800 it takes 1 hour

-0700

1:00

(b) Owori traveled from Entebbe to Kasese in the evening. He then traveled to Entebbe by the earliest flight.

(i) For how long did Owori wait at Kasese?

24:00 Add 0700 hours 1:45

-22:15 +07:00

1:45 8:45

Owori waited at Kasese for 8 hours and 45 minutes

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:10 Pg 421 (New Edition)

Remarks:

_____

_____

LESSON 10

SUB TOPIC: TIME

CONTENT: Application of timetables

Example

1. The table below shows a morning programme line up on star FM. Study the programme and answer the questions:

Time	Programme	Presenter
8:00am – 8:15 am	News	Aisha Nambedha
8:15 am – 10:15am	Healthy tips	Apio Olga
10:15am – 10:30am	News	Muwanga Kisolo
10:30am – 11:30 am	Educational Programme	Birungi Apuuli
11:30am – 11:45am	News	Muwanga Kisolo
11:45 am – 12:30pm	Farmers' platform	Iriko Tasiko

(i) How many programmes are covered from 8:00am up to 12:30pm?

Six programme are covered from 8:00am up to 12:30pm.

(ii) Which presenter is concerned with farming?

Iriko Tasiko is concerned with farming?

(iii) Which programme in the table is the longest?

The healthy tips programme is the longest.

(iv) How long does the healthy tips programme last?

10:15 am

-8:15 am The healthy tips programme lasts 2 hours.

2:00

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:11 & 21:12Pg 422 - 423 (New Edition)

Remarks:

_____

_____

LESSON 10

SUB TOPIC: TIME

CONTENT: changing km/hr to m/s and vise versa

Example

1. change 10m/s to km /hr
2. change 90km/hr to m/s

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EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 pg 331 (old edition)
MK NCDC bk 6 pg 116

Remarks:

_____

_____

Lesson 11:
Subtopic : average speed
Content: finding total distance and time taken
Calculating average speed for the whole journey

a) The HM travelled from home to school at 60km/hr for 2 hrs. He returned at a speed of 40km/hr. calculate his average speed for the whole journey.

TOPICAL QUESTIONS ON TIME

1. Namayanja arrives at Kampala at 11:20pm and leaves at 2:0am to travel to Nairobi. She is due into Nairobi at 6:00am the following day. Unfortunately she is delayed and arrives at 9:30am.
   (a) How late is Namayanja in arriving at Nairobi?
   (b) For how long does Namayanja have to wait in Kampala?
   (c) At what time does Namayanja leave Kampala on the 24 – hour clock?
2. A lesson started at 10:30am and ended at 11:50 am. How long did the lesson last?
3. Convert 7200 seconds into hours.
4. Convert 1717 hours to a 12- hour clock.
5. Thieves escaped from the prisons at 12:15 am. Express this time in a 24-hour clock.
6. Convert 2 ½ hours to minutes.
7. It takes 4 hours for a bus traveling at 75 km/hr to move from town X to town y. Find the time taken by a bus traveling at 50km/hr to cover the same distance.
8. Two buses were moving towards each other. Bus A moving at a speed of 40km/hr and bus B at a speed of 60km/hr If bus A starts at town P and bus B starts at Q a distance of 240km.
   (i) After how many KM from B will they meet?
   (ii) If both vehicles start at 9:00 am at what time will the two buses meet?
9. The table below shows the arrival and departure time for a bus moving between Masaka and Kampala.
   (i) How long did the bus take to travel from Masaka to Nateete?
   (ii) For how long did the bus stay at Nateete?
   (iii) If the distance between Masaka and Kampala is 280km. calculate the average speed of the bus for the time it spent traveling.
10. Express 90km/hr as m/sec.
11. Convert 10m/second to km/hour
12. A motorist covered 140km between 11:25 am and 2:55pm. Find his average speed.
13. It takes a car industry 1 hour 10 minutes 20 seconds to assemble a car. How long will it take to assemble 50 cars?

LESSON 1
SUB TOPIC: MONEY

CONTENT: Bills
Example

1. A mother had a 5,000 shillings note and bought the following items.
   1 ½ kg of beans at 2600 per kg .
   500g of salt at shs 700 each kg.
   2 bars of soap at shs 6200
   (a) How much did she spend and what was her balance?
   Soln:

Beans	Salt	Soap	Total expenditure
1 1/2kg x 600 6 x 2600 2 3 x 300 = 3900	500g 1kg = 1000g 500 kg 1000 500 x 700 1000 5 x 70 = 350	2 bars = 6200	3900 6200 +350 10450/=

Balance = Money at hand – Total expenditure
15000
- 10450
4650

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(b) Given that she was given a discount of 10% on the total expenditure. How much money did she pay?
Total expenditure = 100%
Discount = 10%
%age of money paid = 100% - 10%
= 90%
Amount = $\frac{90}{100}$ x 1650
= 9 x 165=
= 1485=

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:11 & 21:12Pg 214 - 216 (New Edition)

Remarks:

_____

_____

LESSON 2: REVIEW (LOWER WORK)
SUBTOPIC: MONEY
CONTENT: SHOPPING:

Example: Twaha bought the following items from a shop:
3½ of beans at shs. 1400 per kg.
1½ Kg of salt at Shs. 1000 per Kg
4 bars of soap at Shs. 1500 per hour.

(a) If Twaha was given a discount of 20% on his total expenditure, how much was the discount?

(b) How much did Twaha pay?

EVALUATION ACTIVITY:
Teacher's collection.

Remarks:

_____

_____

LESSON 3: REVIEW (LOWER WORK)

SUBTOPIC: MONEY
CONTENT: NOTES IN A BUNDLE

Example:
Moses was preparing for his birthday party and had a bundle of 5000 shilling notes numbered from DL 576634 to DL 576733. Find how much money he had to use.

EVALUATION ACTIVITY:

A New MK Primary Mathematics, Pupils' Book 6 (Pg. 218), Exercise 10.

LESSON 4: REVIEW (LOWER WORK)

SUBTOPIC: MONEY
CONTENT: EXCHANGE RATES

Example:
Given that the exchange rate of US$ to Ush. Is US$ 1 to U sh. 1800 and that the exchange rate of K sh to U sh. Is K sh. 1 to U sh 23. How much money in Uganda shillings do I have in total if I have Us $ 85 and K sh. 12500?

EVALUATION ACTIVITY:
A New MK Primary Mathematics, Pupils' Book 6 (Page. 220-221), Exercise 10:4

Remarks:
LESSON 5:

SUB TOPIC: CURRENCY

CONTENT: The type of money used in a country is called currency.
Different countries' currencies have different names:

Country	**Currency**
Burundi	Burundi francs (BF)
Zambia	Kwacha (Kch)
Zimbabwe	Zimbabwe Dollar (Z$)
German	Deutsch mark (DM)
Egypt	Egyptian pound , etc

Bank notes:

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Bank notes are numbered consecutively from A/P 003782 to A/P 003881. How many notes are there?

First note	A/P 003782
Last note	A/P 003881
Number of notes	A/P 003881
	- A/P 003782
	 99

Total number of notes = 99 + 1 = 100 notes

EVALUATION ACTIVITY:

1. Amos has paper notes numbered from A/P 004300 to A/P 004399.
   (a) Ho w many paper notes does Amos have?
   (b) If each is 1000 shillings in value, how much money does Amos have?
2. A school bursar withdrew money from the bank. He was given new banknotes numbered consecutively Q/P 728601 to Q/P 728700. If each note was shs 500. How much money was withdrawn?
3. Find the amount of money in a bundle of 1000= notes if they are numbered UH 627400 to UH 627499
4. A cashier is paying salaries to teachers. How many 1000 shilling notes will he give to a teacher who gets a salary of:
   (i) 96000=
   (ii) 75000
5. A money counting machine detects and records paper money. If 98000 of 1000 shillings denominations are inserted in the machine, what number will be recorded on the machine?
6. Francis has the following money:
   5000 shilling notes numbered AC 502830 to ACX 502839
   1000 shilling notes numbered CU 412389 to CU 412397
   10000 shilling notes numbered SM 301422 to SM 301437
   How much money does he have altogether?
7. How many 500 coins are equivalent to a ten thousand shilling note?

Remarks:

_____

_____

LESSON 6:

SUB TOPIC: **COMPARISON OF CURRENCIES**

CONTENT: Bills

Example

Other country	Uganda shilling
Kenya shillings (Ksh 1) equivalent to	Ushs 20
Tanzania shilling (TZ sh)	Ush 2.2
USA dollar (US$ 1)	Ushs 1050
Great Britain pound (£1)	Ushs 1650
Rwanda francs (RF 1)	Ushs 2.5

1. A trader sold maize to Kenya for K shs 150,000. How much money did he get in Uganda money?
   Ksh 1 equivalent to U sh 20
   K sh 150,000 Ushs 20 x 150,000=
   = U shs 3,000,000=

2. How much Uganda shillings is equivalent to £20 plus Tz hs 30,000?

Tz shs 30,000	Total Uganda currency
Ushs 1650	Ushs 33,000
20 = Ush 1650 x 20	Ush 66,000
= U sh 3,300	_____
TZ sh = Ush 2.2	Ushs 99,000
TZ shs 30,000 = Ush 22 x 30,000 / 10	_____

3. Kizito works with the Tanzania high commission and his monthly salary is TZ sh 15,000. What is his salary in Uganda currency.
4. Musiime exported coffee to USA and earned US$ 25,000. He also exported maize to Kenya and earned K shs 500,000. Calculate his total earning in Ug currency.
5. Convert £37,000 to Uganda shillings.
6. Mr Senabulya Mwanje went to the Forex Bureau with U shs 4725000. How much US$ did he get in exchange.
7. Convert US$150 to Kenya shillings if the exchange rate Kshs to US$ is US$ to Kshs 55.

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 21:11 & 21:12Pg 214 - 216 (New Edition)

Remarks:

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LESSON 8

SUB TOPIC: ADVERTSEMENT

CONTENT:

Example

Advertisement is sometimes done in newspapers or radios o television.

The table below shows how adverts are charged in red pepper news paper.

Size	Black and white	Full colour
Full page (inside)	1,145,300	1,750,000
Half page	257,650	875,000
Quarter page	286,350	438,000
Front page	1,145,300	1,638,000
Back page	297,800	595,000

1. What would be the total cost of advertising using front page full coloured and quarter page black and white?
2. Calculate the cost of running the following adverts.
   (a) Front page black and white
   (b) Half page full colour
   (c) Back page full colour
3. Musoke advertised using quarter page full colour for 3 days and full page black and white for the same number of days. Calculate his total expenditure.
4. A company advertised using half page black and white for 3 days and half page full colour for 4 days. What is the total company's expenditure on the adverts.
5. Which is cheaper?
   (i) to advertise quarter full colour for 4 days or
   (ii) to advertise half page black and white for 3 days?

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 291-293 (New Edition)

Remarks:

LESSON 9

SUB TOPIC: RADIO ANNOUNCEMENTS

CONTENT:

(i) Death, accidents and sickness US 1000 for the first 25 words.
U shs 100 for each extra word

(ii) Notices last funeral rites, lost and found items.
U shs 3,000 for the first 25 words
U shs 100 for each extra word

(iii) Business thanks and births
U shs 5000 for the first 25 words.
U sh 100 for each extra word

1. What is the cost of sending a death announcement of 27 words on Radio Kiboga?
   The death announcement of 27 words
   First 25 words cost 1000=
   2 extra words cost 100 x 2 = 200
   Total cost = 1000 + 200
   = 1200

EVALUATION ACTIVITY:

1. What is the cost of sending 2 death announcements of 30 words each?
2. Mr Kasekende sent 2 notices one of 24 words and another of 34 words through Radio Kiboga. How much money did he pay to Radio Kiboga?
3. Mr Ssenku sent 2 business annoucnemnt of 30 words each and sent 2 business announcements of 30 words each and a thanks announcement of 23 words. Calculate his total expenditure?
4. What will be the total cost of sending:
   (i) One sickness announcement of 27 words.
   (ii) One death announcement of 33 words.
   (iii) The last funeral rite announcement of 33 words .
   (iv) A thanks announcement of 15 words.
5.

Remarks:

LESSON 10

SUB TOPIC: POSTAGE CHARGES

CONTENT: Letters and printed papers

Example

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The Uganda posts and Telecommunication transports letters and Newspaper for people and charges them accordingly.

1. Letters: For the first 20 grams shs 50
   Each additional word 50gram shs 30.

2. Printed papers: For the first 50 grams shs 50
   Each additional 50 grams shs 20

(a) How much does it cost to post a letter weighing 120 gram?

First 20 grams = shs 50

Additional grams = 120 – 20

Additional 20 grams = $\frac{100}{20}$

= 5 additional 20 grams

= 5 x 30 = 150

= 150 + 50

= 200

(b) How much does it cost shs 2000 to post 2 letters each weighing 120 grams and 2 printed papers each weighing 300grams?

Letters

1 letters weighing 120g – 20g = shs 50

Additional grams = 120 – 20

= 100g

Additional 20 grams = $\frac{100}{20}$

= 5

1 letter = 50 + 150

= 200

2 letters = 200 x 2

= 400

Printed papers:

First 50g = sh 50

Additional grams = (300 – 5)

= 250g

Additional 50g = $\frac{250}{50}$

= 5

= 5 x 20 = 100

Total cost of 1 printed paper = 100 + 50 = 150

Total cost of 2 printed papers = 150 x 2 = 300

Total cost of posting letters and printed papers = 400 + 300 = 700

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 14:13 271- 272(Old Edition)

Remarks:

_____

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TERM III

LESSON 1:

SUB TOPIC: **METRIC SYSTEM**

CONTENT: Comparing units/conversion of metric units

Examples:
Comparing metric units
Using base ten to compare metric units.

106	105	104	103	102	101	100
Km	Hm	Dm	Metre	Dm	Cm	Mm
Kg	Hg	Dg	Gram	Dg	Cg	Mg
Kl	Hl	Dl	Litre	Dl	Cl	Ml

2. Conversion of metric units.
   (a) Change 7m to millimeter
   1m = 1000m
   7m = (7 x 1000m)
   = 7000mm

3. Change 800m to km
   1km = 1000m
   1m = $\frac{1}{1000}$km
   800m = $\frac{1}{1000} \times 800$
   = $\frac{8}{10}$ = 0.8km

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 18:2 and 18:1 Pg 344

Remarks:

LESSON 2:
SUB TOPIC: **ADDITION AND SUBTRACTION OF METRIC UNITS**
CONTENT: Addition and subtraction of metric units
Examples:

1. 5cm, 8mm + 8cm + 3mm (Answer in Cm)

Cm	mm	
5	8	
+8	3	
14 .	1	= 14.1cm

2. Subtract: 8m – 7cm

M	cm	
7	100	
8	00	
-	07	
7	93	= 7m 93cm

EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exercise 18:3 and 18:1 Pg 345
Remark:

LESSON 3:
SUB TOPIC: **METRIC SYSTEM**
CONTENT: Multiplication and division of metric units
Examples:

1. Multiply 7cm 9mm by 4.

Cm	mm	
7	9	316mm
X	4	31cm 6mm
		or 31.6cm
31	6	

2. Divide 2.4km wire into pieces of 60 metres each.
   2.4km 1km = 1000m
   60m 2.4km = 24 x 1000
   10

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= 24 x 100
= 2400ms
2400
60 = 40 pieces

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 18:4 and 18:1 Pg 346

Remarks:

_____

_____

LESSON 4:

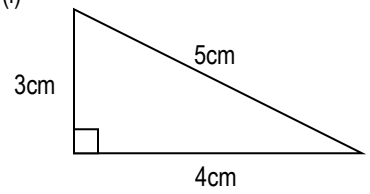
SUB TOPIC: METRIC SYSTEM

CONTENT: Perimeter of triangles, quadrilaterals combined figures and other polygons (Revision)

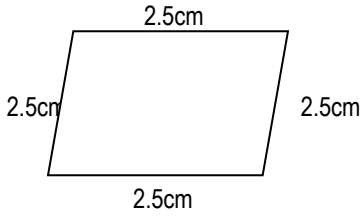
Examples:

Find the distance (Perimeter) around the shapes given below:

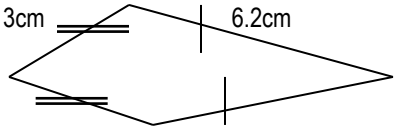
(i)



(ii)



(iii)



EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 Pg 347-350

Remarks:

_____

_____

LESSON 5:

SUB TOPIC: application of perimeters

CONTENT: Perimeter of triangles Application of perimeter

(a) a) Roles in a straight line (Open fences)

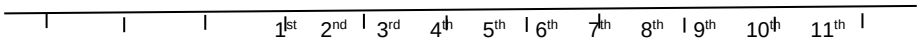
(b) 1. Electric poles are planted 20m apart. Find the distance

(c) from the first pole to the 10th pole.

(d) Solution:

(e) a) Relating numbers of poles to number of spaces.

(f)



By counting we have ten poles btn 1st and tenth pole and nine spaces.

No. of spaces = No of poles – 1

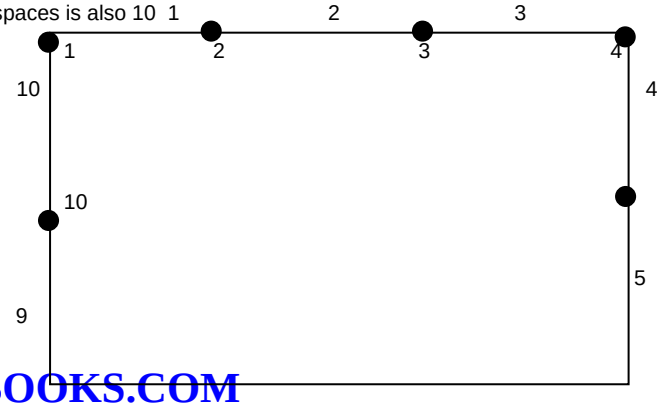
Distance = (10 – 1) X 20m

= 9 X 20m

= 180m.

2. **Closed fences:**

In closed fences the number of poles corresponds with the number of spaces. In the illustration below the number of poles is 10 and the number of spaces is also 10



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Example:

Mukasa's rectangular flower garden measures 10m by 8m. He fenced it, putting the poles 2m apart. How many poles did he need?

Solution:

Perimeter of flower garden

= 2(l + w)

= 2(10 + 8)m

= 2(18)

= 36m

No. of poles

= Perimeter / Space btn poles

= $\frac{36m^{18}}{2m}$

= 18 poles

ACTIVITY:

1. When sprinting, Ivan athlete covers 180cm with every stride.
(a) How many strides does he take to finish 100m.
(b) How far does he run in 200 strides?
2. Telephone poles are 20m apart. What is the distance from the first pole to the 16th pole?
3. The distance around my farm is 400m. If I want posts for fencing spaced 4m, how many posts will I need?

EVALUATION ACTIVITY:

Macmillan Primary Mathematics Bk 7 exercise 1 Pg 81.

Remarks:

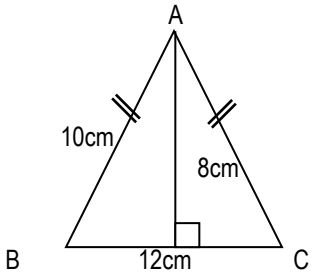
Lesson : 6

SUB TOPIC: **TRIANGLE**

CONTENT: Area of a triangle

Examples:

1. Find the area of triangle ABC



A = ½ x b x h
= ½ x 12 x 8
=6 x 8
A = 48cm².

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:1 and 18:1 Pg 351

Remarks:

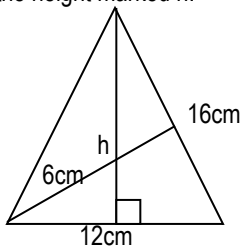
LESSON 7:

SUB TOPIC: **TRIANGLE**

CONTENT: Finding the missing side when given the area.

Examples:

1. Find the height marked h.



½ x b x h = ½ x b x h

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½ x 12 x h = ½ x 16 x 6
6h = 48
6h = 48
6 6 ∴ h = 8cm

EVALUATION ACTIVITY:

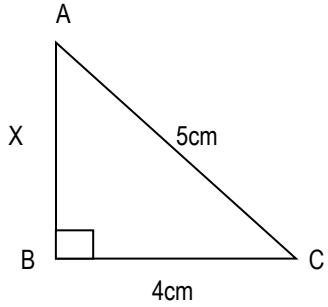
A New MK Primary Mathematics Bk 7 exercise 19:2 and 18:1 Pg 352

Remarks:

LESSON 8

SUB TOPIC: **TRIANGLE**

CONTENT: Application of Pythagoras theorem in a triangle.
Examples:
1. Find the value of x and the area of the figure below.



Value of x=
$a^2 + b^2 = c^2$
$4^2 + x\ 2 = 5^2$
4 x 4 + x2 = 5 x 5
$16 + x^2 = 25$
$16 - 16 + x^2 = 25 - 16$
$X^2 = 9$
$\sqrt{X^2} = \sqrt{9}$
X = 3cm

2. Area of the triangle
A = ½ x b x h
= ½ x 4 x 3
= 2 x 3
= $6cm^2$

EVALUATION ACTIVITY:

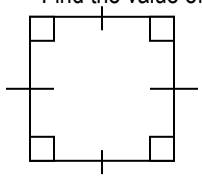
A New MK Primary Mathematics Bk 7 exercise 19:3 Pg 353

Remarks:

LESSON 9

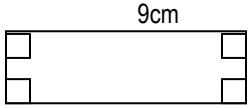
SUB TOPIC: **QUADRILATERALS**

CONTENT: Area of: square, rectangle and parallelogram
Examples:
1. Find the value of x and the area of the figure below.



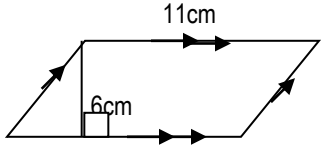
A = S x S
= 7 x 7
= $49cm^2$

2.



A = L x W
= 9 x 5
= $45cm^2$

3.



A = b x h
= 11 x 6
= $66cm^2$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:4 Pg 354

Remarks:

LESSON 10

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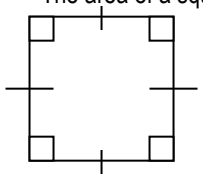
SUB TOPIC: **QUADRILATERALS**

CONTENT: Finding the unknown side when given area.

Examples:

1. The area of a square is 49cm2. Find the length of each side..



5cm

A = S x S
= s x s = 49cm2
S2 = = 49cm^2
$\sqrt{S^2} = \sqrt{49}$
S = 7cm

2. The are a of a rectangular garden is 48m2. Find its length if it has a width of 6cm.

A = L x W
L x 6 = 48m^2
6L = 48
6l 48
6 6
L = 8m

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:5 and 18:1 Pg 355

Remarks:

_____

_____

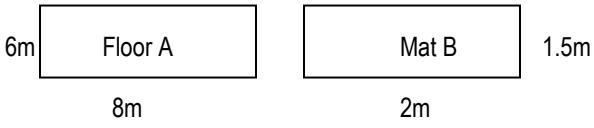
LESSON 11

SUB TOPIC: **AREA OF QUADRILATERALS**

CONTENT: Comparison of different areas

Examples:

1. How many mats (B) can cover floor (A)?



1m = 100cm
8m = 800cm
6m = 600cm
2m = 200cm
1.5m = 150cm

= 4 x 4
= 16mats

4
A long length: 800
200
= 4 mats
A long width 600
150
= 4 mats

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:6 Pg 356

Remarks:

_____

_____

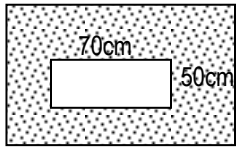
LESSON 12

SUB TOPIC: **AREA OF RECTANGLE**

CONTENT: Shaded and unshaded regions.

Examples:

1. A table of size 90cm by 60cm was partly covered with a piece of cloth 70cm by 50cm. What part of the table was uncovered?



Area of the table top
A = L x W
= 90 x 60
= 5400 cm^2

Area of the cloth
A = L x W
= 70 x 50
= 3500cm^2

Uncovered area =
5400cm^2
- 3500cm^2

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1900cm²

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:6 Pg 356

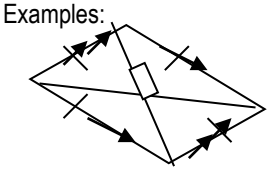
Remarks:

LESSON 13

SUB TOPIC: **AREA OF Rhombus**

CONTENT: Area of a Rhombus

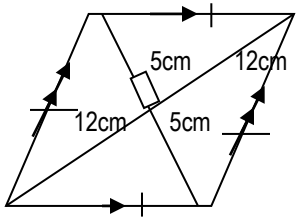
Examples:



- This parallelogram and height is called a rhombus.
- If the base and height are given, Area = base x height.
- If the two diagonals are given,
  Area = ½ x d_1 x d_2

Therefore, the area of the 4 congruent triangles in a Rhombus.

A = ½ x b x h x 4 triangles



Example: A = ½ x b x h x 4
½ x 12 x 5 x 4
= ½ x 12 x 5 x 4
= 12 x 5 x 2
= 12 x 10
= 120xm²

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:8 Pg 358

Remarks:

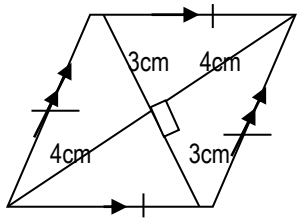
LESSON 14

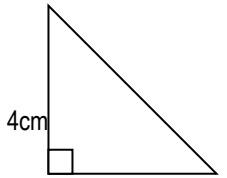
SUB TOPIC: **AREA OF QUADRILATERAL**

CONTENT: Application of Pythagoras theorem in a rhombus

Examples:

1. Calculate the length of each side of a rhombus whose diagonals are 8cm and 6cm.





$a^2 + b^2 = C^2$
$3^2 + 4^2 = C^2$
3 x 3 + 4 x 4 = C^2
9 + 16 = C^2
25 = C^2
25 = C^2
5 = C

Each side of a rhombus is 5cm

EVALUATION ACTIVITY:

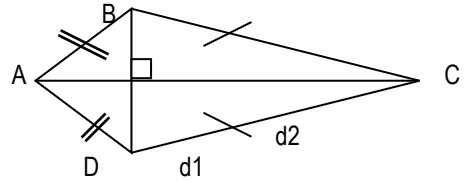
A New MK Primary Mathematics Bk 7 exercise 19:9 Pg 360

Remarks:

LESSON 15:

SUB TOPIC: **AREA OF QUADRILATERAL**

CONTENT: Area of a kite.



ABCD is a kite
Area of the kite = ½ x the two diagonals = ½ x d1 x d2
Or Separate the kite into 2 different isosceles triangles of the same base ie ABC and BCD
Area = (½ x b x h) + (½ x b x h)

Example:
OPQR is a kite Calculate its area.

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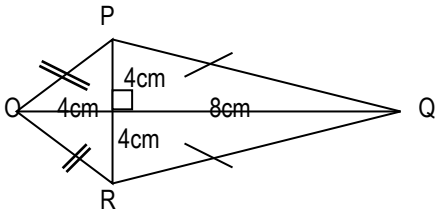


Method II
Area of a kite
½ x d1 x d2
½ x 8 x 12
= 48cm^2

Method II
(using triangles)
Area = (1/2 x b x h) + (1/2 x b x h)
(½ x 8 x 4) + (½ x 8 x 8)
16 + 32
= 48cm^2

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:10 Pg 361

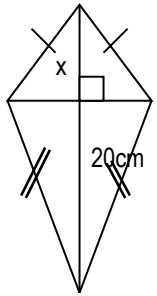
Remarks:

LESSON 16

SUB TOPIC: **AREA OF QUADRILATERAL**

CONTENT: Finding the unknown side of a kite given area.

Examples: The area of the kite below is 160cm2. One of the diagonals is 20cm Find the length of the second diagonal.



Area of a kite = ½ x d1 x d2
160 = ½ x 12 x d2
160 = 10d
$\frac{160}{10} = \frac{10d}{10}$
16 = d
Second diagonal = 16cm
X = $^{d}/_{2}$ = $^{16}/_{2}$ = 8cm

EVALUATION ACTIVITY:

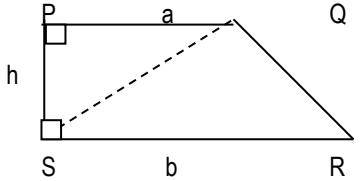
A New MK Primary Mathematics Bk 7 exercise 19:11 Pg 362

Remarks:

LESSON 17

SUB TOPIC: **AREA OF QUADRILATERAL**

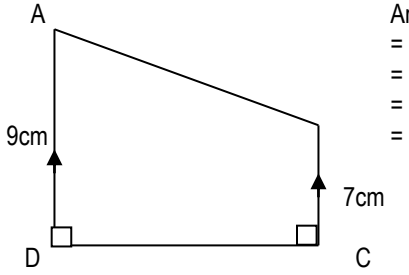
CONTENT: Finding the area of a trapezium



a = short parallel side
b = long parallel side
h = height

Area of a triangle PQS = ½ x a x h = ½ ah
Area of triangle QRS = ½ x b x h = ½ bh
Area of two triangles = ½ ah + ½ bh
= ½ h(a+b)
Area of a trapezium = ½ h(a+b)

Example:



Area of a trapezium = ½ h (a + b)
= ½ x 4 x (7 + 9)
= ½ x 4 x 16
= 2 x 16
= 32cm^2

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:12 Pg 363

Remarks:

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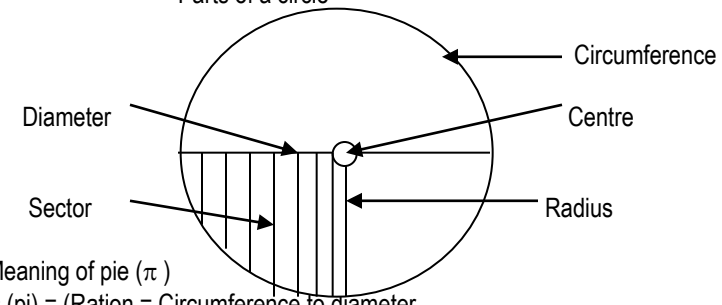
LESSON 18

SUB TOPIC: **CIRCLE**

CONTENT: Circumference of a circle when given diameter

Parts of a circle



Meaning of pie (π)

π (pi) = (Ration = Circumference to diameter.

Example: $Pi = \frac{\text{circumference}}{\text{Diameter}}$

$\pi = \frac{C}{D}$

$X\ D = \frac{C \times D}{D}$

NB. Pi (π) $= \frac{22}{7} = 3\ ^1/_7$

Or $= 3.14$

1. Find the circumference of a circle whose diameter is 10cm. (Use $\pi = 3.14$)

   $C = D$

   $= 3.14 \times 10$

   $= \frac{3.14}{100} \times 10 = 31.4$

   $C = 31.4cm$

2. Calculate the circumference of a circle whose diameter is 14cm. (Use $\pi = \frac{22}{7}$)

   $C = \pi D$

   $= \frac{22}{7} \times 14$

   $= 22 \times 2$

   $C = 44cm$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:15 Pg 370

Remarks:

LESSON 19

SUB TOPIC: **CIRCLE**

CONTENT: Finding circumference when given radius

Examples: $C = 2\pi R$

1. Find the circumference of a circle whose radius is:

   (a) 7cm

   $C = 2\pi r$

   $= 2 \times \frac{22}{7} \times 7$

   $= 2 \times 22$

   $= 44cm$

   (b) 10cm

   $C = 2\pi r$

   $2 \times 3.14 \times 10$

   $2 \times \frac{314}{100} \times 10$

   $= \frac{628}{10}$

   $= 62.8cm$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:16 Pg 371

Remarks:

LESSON 20

SUB TOPIC: **CIRCLE**

CONTENT: Finding the radius of a circle when circumference is given

Examples:

1. Find the radius of a circle whose circumference is 44cm.

   $C = 2\pi r$

   $2\pi r = 44cm$

   $2 \times \frac{22r}{7} = 44$

   $\frac{44r}{7} = 44$

   $\frac{7}{\cancel{44}} \times \frac{\cancel{44}r}{7} = 44 \times \frac{7}{44}$

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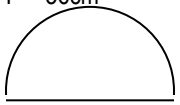
EVALUATION ACTIVITY:
A New MK Primary Mathematics Bk 7 exercise 19:19 Pg 375
Remarks:

LESSON 21

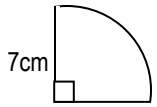
SUB TOPIC: **CIRCLE**

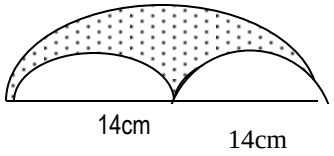
CONTENT: Finding the perimeter of shapes using pi (π)
Examples:

$P = \frac{1}{2} \pi D + D$
$= \frac{1}{2} \times 22 \times 14 \times 14$
$= 22 + 14$
$P = 36cm$



$P = \frac{1}{4} 2\pi R + R + R$
$= \frac{1}{4} \times 2 \times 22 \times 7 + (7 + \&)$
$= 11 + 14$
$P = 25cm$





Diameter of big semicircle = 28cm
Circumference of big semicircle
$= \frac{1}{2} D = \frac{1}{2} \times \frac{22}{7} \times 28$
$= 22 \times 2$
$= 44cm$

Diameter of each small semicircle = 14cm
Circumference of one semicircle = $\frac{1}{2} D$
$= \frac{1}{2} \times \frac{22}{7} \times 14$
$= 22cm$
Perimeter of the figure = 22cm + 22cm + 44cm
= 44cm + 44cm
= 88cm

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:19 Pg 375

Remarks:

LESSON 22

SUB TOPIC: **CIRCLES**

CONTENT: Circumference (Application)
Examples:

1. How many revolutions can a wheel of a car 35cm in diameter make in a distance of 4.4km?

$C = \pi D = \frac{22}{7} \times 35$
$= 22 \times 5$
$= 110cm$

1km = 100,000cm
$4.4km = 44 \times \frac{100000}{10}$
44×10000
$= 440000cm$
1 revolution = 110cm
No of revolutions = $\frac{440000}{110}$

2. A wire of length 352ms is wound round a tin 400 turns. Find the diameter of the tin.

1m = 100cm
352m = 352 x 100
= 35200cm
$1 \text{ revolution} = \frac{352000}{400}$
$= 88cm$
$C = \pi D$
$\frac{22D}{7} = 88cm$
$\frac{7}{22} \times \frac{22D}{7} = 88 \times \frac{7}{22}$

$\therefore D = 4 \times 7 = 28cm$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:20 Pg 376 – 377 (New Edition)

Remarks:

LESSON 23

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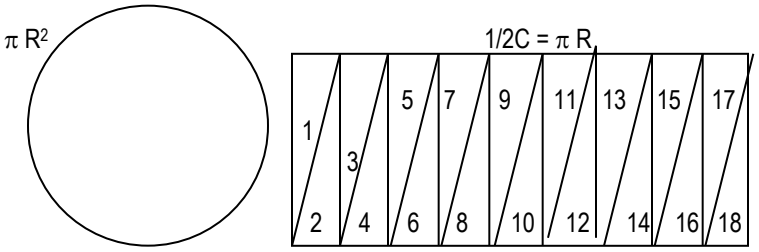
SUB TOPIC: **CIRCLES**

CONTENT: Area of a circle (given Radius)
Formular of the area of a circle.



Area of a rectangle = L x W
Area of a circle = ½ C x r
= ½ 2 π r x r
=π r x r
= π r^2
Examples:

1. Find the area of a circle whose radius is 14cm (π= 22/7)

   Area of a circle = π r2
   = 22/7 x 14 x 14
   = 44 x 14
   = 616cm^2

2. A circular table cloth has a radius of 20cm. Calculate the area. (π= 3.14)

   Area of a circle = π R2
   = (3.14 x 20 x 20) cm^2
   = (3.14 x 400)cm^2
   = 314/100 x 400/1
   = 1256cm^2

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:21 Pg 380 (New Edition)

Remarks:

LESSON 24

SUB TOPIC: **CIRCLES**

CONTENT: Calculating area of circles given diameter.
Examples:

1. Find the area of a circle whose diameter is 8cm (π = 3.14)
   Diameter = 8cm
   Radius = 8/2 = 4cm
   Area = rπ2
   =(3.14 x 4 x 4)cm^2
   =3.14 x 16)
   =50.24cm^2

2. Find the area of a circle whose diameter is 28cm (= 22/7)
   Daimeter = 28cm
   Radius = 28/2 = 14cm
   Area =R^2
   =(22/7 x 14 x 14) cm^2
   =44 x 14
   =616cm^2

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:22 Pg 381

Remarks:

LESSON 25

SUB TOPIC: **CIRCLES**

CONTENT: Find the radius, diameter, circumference when given the area.
Examples:

1. The are of a circle is 154cm2. Find its:
   (a) radius (b) Diameter

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$A = r^2$
$R2 = 154cm^2$
$22r^2 = 154$
7
$\frac{7}{22} \times \frac{22r^2}{7} = 154 \times \frac{7}{22}$
$r^2 = 7 \times 7$
$r^2 = 49$
$r^2 = 49$
$r = 7cm$

(c) Circumference
$2 \times R$
$\pi r2 = A$
$= 2 \times 7$
$= 14cm$
Circumference
$C = D$
22×14
7
$= 44cm$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:22 Pg 381

Remarks:

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LESSON 26

SUB TOPIC: **CIRCLE**

CONTENT: Finding area when given circumference

Examples:

1. Find the area of a circle whose circumference is 44cm

$C = 2\pi r$
$2\pi r = 4cm$
$2 \times 22r = 4$
7
$\frac{44r}{7} = 44$
$\frac{7}{44} \times \frac{44r}{7} = 44 \times \frac{7}{44}$
$\therefore r = 7cm$

$A = \pi r2$
$= 22 \times 7 \times 7$
7
$= 154cm^2$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:24 Pg 382

Remarks:

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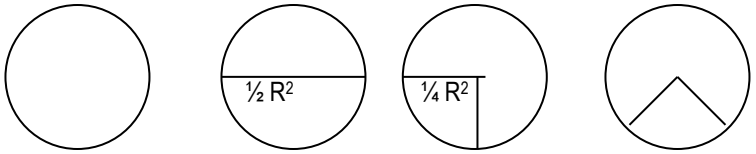
LESSON 27

SUB TOPIC: **CIRCLE**

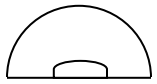
CONTENT: Area of parts of a circle



Circular Region | shaded part is semi circle | ¼ a circle it is a quadrant | sector of a circle

Examples:

1. Calculate area of a semicircle of radius 10cm ($\pi = 3.14$)

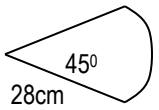


Area = ½ R2
$= (1/2 \times 3.14 \times 10 \times 10)\ cm^2$
$=(3.14 \times 5 \times 10)$
$= 157cm^2$.

2. Calculate the area of a sector of a circle of radius 28cm and centre angle 45^0.

Area = ¼ x R2
$= (\frac{1}{4} \times \frac{22}{7} \times 14 \times 14)\ cm^2$.
$= ¼ \times \frac{22}{7} \times 14 \times 14 = 154cm^2$

3. Calculate the area of a sector of a circle of radius 28cm and centre angel 450.



Area = $(\frac{45}{360} \times \frac{22}{7} \times 28 \times 28)cm^2$
$= \frac{1}{8} \times \frac{22}{7} \times 28 \times 28$
$= 11 \times 28 = 308cm^2$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:25 Pg 384

Remarks:

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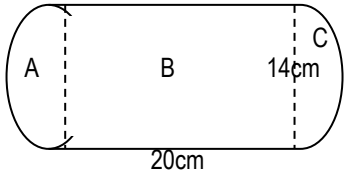
LESSON 28

SUB TOPIC: **AREA OF A CIRCLE**

CONTENT: Finding area of irregular shapes

Examples:

1. Find the area of the shape below.



Diameter = 14 cm

Radius = $\frac{14}{2}$

= 7cm

Area = A + B + C

= ½ C + Rec + ½ C

= ½ C + ½ C + Rec

= 1 circle + Rec

= πR2 + L x W

= $\frac{22}{7}$ x 7 x 7 + 20 x 14

= 154 + 280

= 434 cm^2.

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:26 Pg 385 (New Edition)

Remarks:

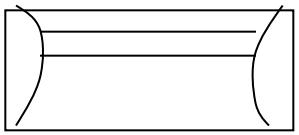
LESSON 29:

SUB TOPIC: **CIRCLE**

CONTENT: Shaded region

Examples:

1. Find the area of the shaded parts in the figure below.



Area of a semi circle = ½π r2.

= ½ x $\frac{22}{7}$ x $\frac{7}{2}$ x 7 x 2

7cm

= 11 x 7 = 77 x 2

= 2 x 2 4

= 38 ½ cm^2.

12cm

Area of a rectangle = Lx W

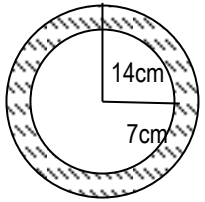
= 12 x 7

= 84cm^2

Area of the shaded part = 84cm^2 - 38 ½ cm^2

= 45 ½ cm^2

2. Area of the outer circle



=π r2

= 22 x 14 x 14

7

= 22 x 2 x 14

= 44 x 14

= 616cm^2.

Area of the inner circle =π r2

= 22 x 7 x 7

7

= 22 x 7

= 154cm^2.

Area of the shaded part = 616cm^2

- 154cm^2

462cm^2

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:27 and 19:28 Pg 386 (New Edition)

Remarks:

LESSON 30:

SUB TOPIC: **application of area of a circle**

CONTENT: how many circular plates A can be cut from a card board B

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7cm 50cm

100cm

b) Calculate the area of the space left
ref: Mk nk 7 pg 389

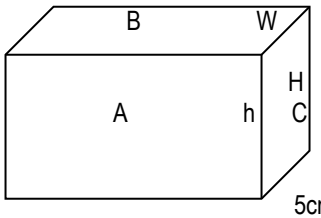
LESSON 31

SUB TOPIC: SOLID FIGURES

CONTENT: Surface area of cubes and cuboids

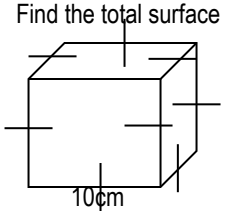
Examples:

1. Find the total surface area of the box 10cm by 5cm by 4cm.



Total surface area
2(face A) + 2(face B) + 2(face C)
2(L x h) + 2(L x w) +2(w x h)
2(10 x 4) + 2(10 x 5) + 2(5 x 4)
2(40) + 2(50) + 2(20)
2x 40 + 2 x 50 + 2 x 20
80 + 100 + 40
180 + 40
220cm^2.

2. Find the total surface of the cube below.



A cube has 6 faces.
Total surface are = Area of one face x 6
A = 6 x 10 x 10
= 60 x 10
= 600cm^2.

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:33 Pg 394 (New Edition)

Remarks:

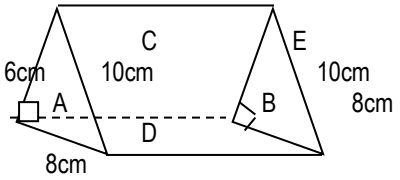
LESSON 32:

SUB TOPIC: SOLID FIGURES

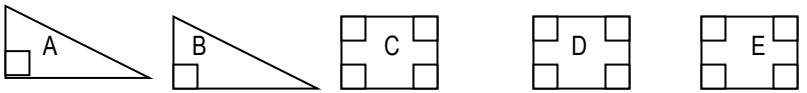
CONTENT: Surface area of a triangular prism

Examples:

1. Find the surface area of the figure below.



The main parts of a triangular prism



½ bh ½ bh L x W L x W L x W

Part A = ½ x b x h
= ½ x 8 x 6
8 x 3
= 24cm^2

Part B = ½ x b x h
= ½ x 8 x 6
= 4 x 6
= 24cm^2

Part C = L x W
= 20 x 8
= 160cm^2.

Part D = L x W
20 x 6
120cm^2

Part E = L x W
= 20 x 10
= 200cm^2

Total Area = 24cm^2
24cm^2
160cm^2
120cm^2
200cm^2

528cm^2

EVALUATION ACTIVITY:

New MK Primary Mathematics Bk 7 exercise 19:34 Pg 368 (New Edition)

Remarks:

LESSON 33:

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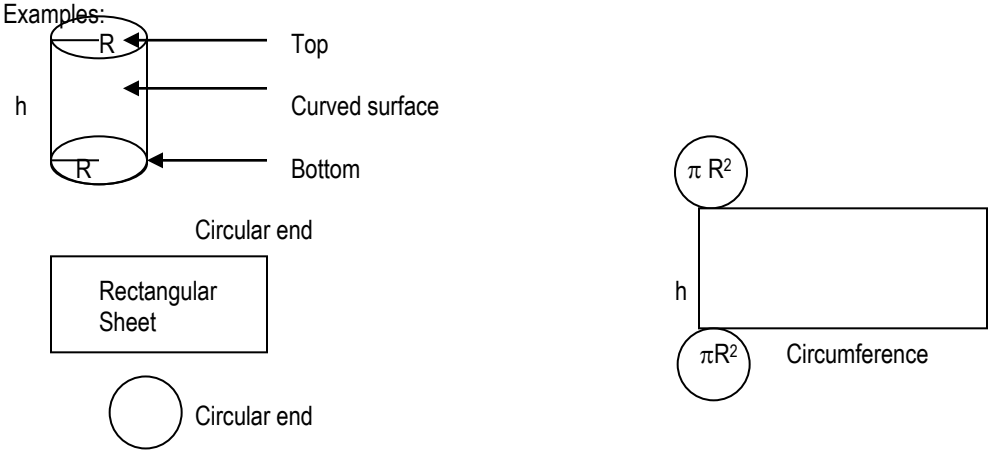
SUB TOPIC: **SOLID FIGURES**

CONTENT: Cylinder
Surface area of a cylinder

Examples:



Total surface area = $R^2 + R^2 + C \times h$
$= \pi R^2 + \pi rh$

2. Find the total surface area of a cylinder whose radius is 7cm and height 10cm (Use = 22)
7

πR^2 + πR^2 + $2\pi Rh$

$2R^2 + 2RH$
$2 \times 22 \times 7 \times 7 + 2 \times 22 \times 7 \times 10$
$7 \qquad 7$
$44 \times 7 + 44 \times 10$
$308 + 440 = 748cm^2$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 19:35 Pg 398 (New Edition)

Remarks:

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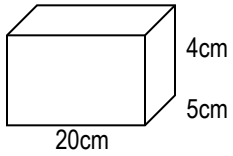
LESSON 34:

SUB TOPIC: **SOLID FIGURES**

CONTENT: Volume of cubes and cuboids

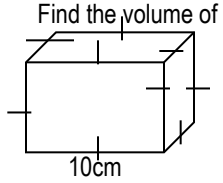
Examples:

1. Find the volume of the cuboid below.



V = base area x height
= 20 x 5 x 4
= 100 x 4
= $400cm^2$

2. Find the volume of the cube below.



V = base area x height
= 10 x 10 x 10
= 100 x 10
= $1000cm^3$

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:1 Pg 399 (New Edition)

Remarks:

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LESSON 35:

SUB TOPIC: **SOLID FIGURES**

CONTENT: Volume of a triangular prism

Examples:

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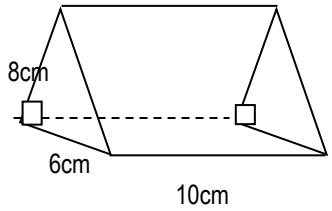
1. Find the volume of the triangular prism in the figure below.



Volume = Base area x length
= ½ x 7 x 6 x 40
= 21 x 10
= 210cm^3

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:2 Pg 400 (New Edition)

Remarks:

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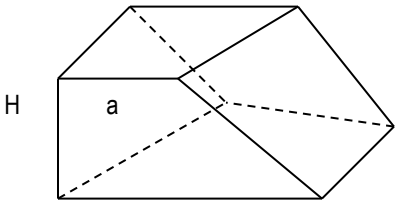
LESSON 36:

SUB TOPIC: **SOLID FIGURES**

CONTENT: Volume of a trapezoidal prism

Examples:

1. Find the volume of the figure below.



Volume of the trapezoidal prism
= ½ x h (a + b) x length
= ½ x 4 (6 + 9)10
= 2(6 + 9) 10
= 2 x 10(15)
= 20 x 15
= 300cm^3

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:3 Pg 401 (New Edition)

Remarks:

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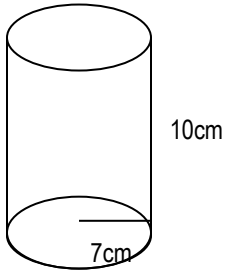
LESSON 37:

SUB TOPIC: **SOLID FIGURES**

CONTENT: Volume of a cylinder

Examples:

1. A cylindrical tin has a radius of 7cm and a height of 10cm. Calculate its volume.



V = base area x h
= r2 x h
= $\frac{22}{7}$ x 7 x 7 x 10
= 22 x 7 x 10
= 154 x 10
= 1540C.C

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:4 Pg 402 (New Edition)

Remarks:

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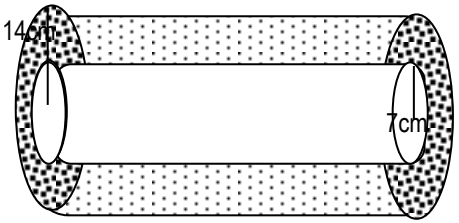
LESSON 38:

SUB TOPIC: **SOLID FIGURES**

CONTENT: Volume of a cylinder

Examples:

1. The figure below shows a cylindrical hollow pipe of concrete. Calculate the volume of the concrete.



Volume of outer cylinder
= лr^{2}h
= $\frac{22}{7}$ x 14 x 14 x 20
= 22 x 2 x 14 x 20
= 44 x 280
X 44

_____

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1120
+ 11200

12320cm³

Volume of the inner cylinder = $\pi r^2 h$
= $\frac{22}{7}$ x 7 x 7 x 20
= 22 x 7 x 20
= 154 x 20
= 3080cm³
Volume of the concrete = 12320 cm³
- 3080 cm³

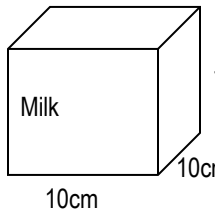
9240cm³

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:5 Pg 403 (New Edition)

Remarks:

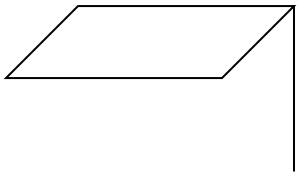
LESSON 39:
SUB TOPIC: **SOLID FIGURES**
CONTENT: Volume and capacity of cubes and cuboids
Examples:
1. A cube measures 10cm by 10cm by 10cm. How many litres of milk can it hold?



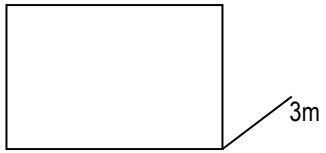
V = base area x h
= 10 x 10 x 10
= 100 x 10
= 1000cm3
1litre = 1000cm3

the cube holds 1 litre

2. How much water will the tank below hold?



1l = 1000cm³
= 1m = 10cm



= 4m = 400cm
=3m = 300cm
= 2m = 200cm
V = (base area) x height
= $\frac{400 \times 300 \times 200}{1000}$
= 400 x 30 x 2
= 12000 x 2
= 24000 litres

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:4 Pg 404 (New Edition)

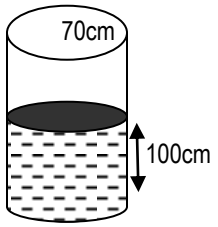
Remarks:

LESSON 40

SUB TOPIC: **SOLID FIGURES**

CONTENT: Volume and capacity of cylinders

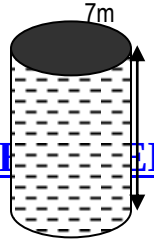
Examples:
1. How much water is in this tank now?



Volume = (base x area) x height
= π r^2 x 100
= $\frac{22}{7}$ x 70 x 100
= 22 x 10 x 7000
220 x 7000
= 1540000cm³
1L = 1000cm³

Capacity = $\frac{1540000}{1000}$
= 1540litres

2. Find the capacity of this tank.



1L = 1000cm³
1m = 100cm
7m = 700cm

D = 700cm
R = $\frac{700}{2}$

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8M = 800CM = 350CM
8m

V = (base x area) x h 22 x 50 x 36 x 8
= πr2 x h 100 x 35 x 8
= 22 x 350 x 350 x 800 1100 x 270
7
= 22 x 50 x 350 x 800 = 308000 litres
1000

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:7 Pg 405 (New Edition)

Remarks:

LESSON 41

SUB TOPIC: **SOLID FIGURES**

CONTENT: Packing cubes or cuboids in boxes

Examples:

1. How many cubes each of 10cm side can be packed in the box?
   Cubes along the sides
   Along the length = 56 = 5 cubes
   10
   Along the width 42 = 4 cubes
   10
   Along the height 60 = 6 layers
   10
   Total number of cubes = 5 x 4 x 6
   = 20 x 6
   = 120 cubes

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:8 Pg 406 (New Edition)

Remarks:

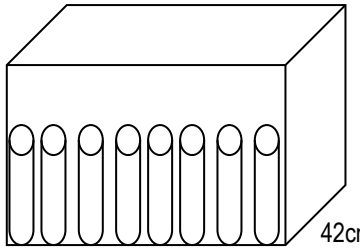
LESSON 42

SUB TOPIC: **SOLID FIGURES**

CONTENT: Packing cylinders in boxes

Examples:

1. How many cylindrical tins of diameter 7cm and height 10cm can be packed in a box measuring 56cm by 42cm by 60cm?



Tins along the sides:
Along length = 56 ÷7 = 8 tins
Along width = 42 ÷7 = 6tins
Along height = 60 ÷10 = 6 layers
Total number of tins (base x tins) x layers
8 x 6 x 6
= 48 x 6
= 288 tins
Altogether = 8 x 6 x 6 = 288 tins

EVALUATION ACTIVITY:

A New MK Primary Mathematics Bk 7 exercise 20:9 Pg 407 (New Edition)

Remarks:

LESSON 46

SUB TOPIC: **mass**

CONTENT: converting kg to quintal and tonne
100kg = 1 quintal

Examples: Express 2500kg to tonne
1000kg = 1 tonne
2500kg = 2500kg
1000kg
= 2.5 tonnes
Evaluation activity
Macmillan Uganda pp 246

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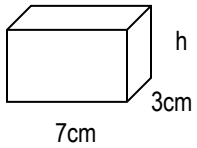
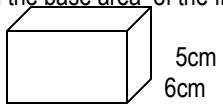
Fountain pp 210-212

QEUSTIONS ON MEASURES:

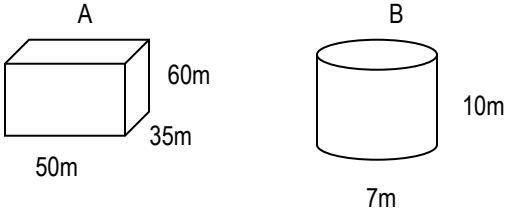
1. How many centimeters are in 0.75 metres?
2. The circumference of a circle is 17.584cm. Find the radius of the circle (Use = π3.14)
3. A cylindrical tank is 7m high. What is the capacity in litres of the tank if its radius is 7m?
4. The volume of the figure below is 105cm^3. Find its height.



5. Find the base area of the figure below.



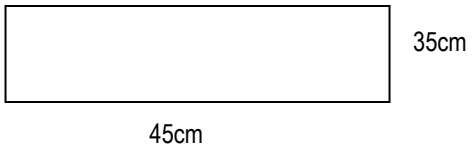
6. Given that the cylindrical tins B are to be packed into box A.



(a) How many tins will be packed in the box?

(b) If container A is a tank full of water, how many full cups of container B can you draw from the tank?

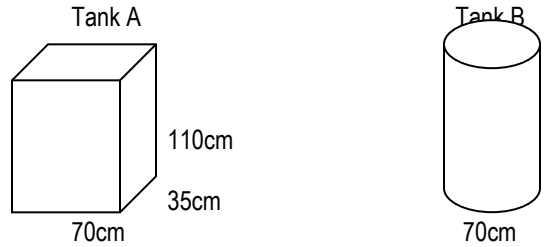
7. Abdul cut out circular plates of diameter 7cm from a rectangular sheet of metal of length 45cm and width 35cm as shown below.



(a) How many circular plates did he cut out from the rectangular sheet?

(b) Find the area of the unused sheet after cutting out the circular plates. (take $\pi = \frac{22}{7}$)

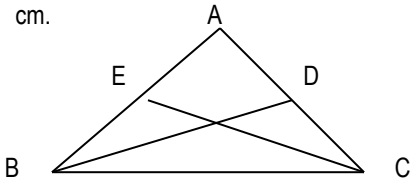
8. A cuboid water tank (A) which is 70cm long by 35cm wide by 110cm high was filled with water. The water from tank A was all poured into the cylindrical tank B of diameter 70cm



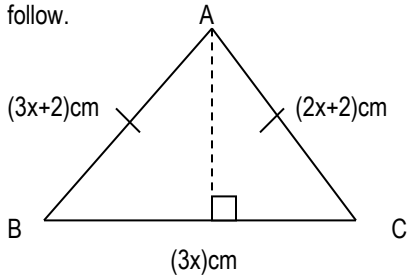
(a) Find the volume of water in tank A when fill.

(b) Find the new highte of water after it has been poured into tank B. (take = $\frac{22}{7}$)

9. In the triangle below, AB = 12cm, CE = 10cm and AC = 16cm. Find the length of BD in cm.



10. The figure ABC below is an isosceles triangle. Use it to answer the questions that follow.



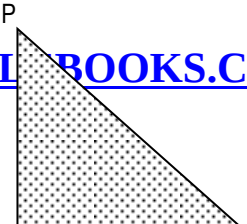
(a) Find the value of x.

(b) Find the area of triangle ABC

(c) Calculate the perimeter of the triangle.

11. Find the circumference of a circular compound whose radius is 14m (take = $\frac{22}{7}$)

12. In the figure below, PQ = QR = 28cm use it to answer the questions that follow.



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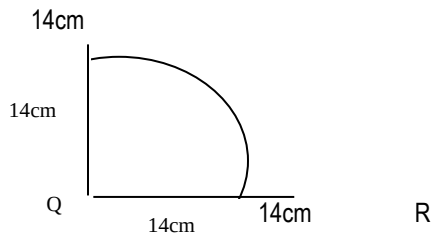

(a) Find the area of triangle PQR.
(b) Find the area of the sector QST
(c) What is the area of the shaded part?

TOPIC 10: ALGEBRA

LESSON 1:

SUB TOPIC: FORMING ALGEBRAIC EXPRESSIONS

CONTENT:
Forming Algebraic expressions.
Example:
1. 3c – Three times C or three c.
2. ab – The product of a and b.
3. (a + b) – The sum of a and b.
4. 3(x – y) – Thrice the difference between x and y.

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:1 & 22:2Pg 427 (New Edition)

Remarks:

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LESSON 2:

SUB TOPIC: COLLECTING AND SIMPLIFYING LIKE TERMS

CONTENT:
Examples:
1. a + a + a = 3a
2. 2p + 3p + p = 6p
3. 2ab + ab + 5ab = 8ab
4. x + y + x + y + x
   x + x + x + y + y
   3x + 2y
5. 3p – 6f – p + 2f
   3p – p + 2f – 6f
   2p – 4f

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:6 & 22:7 Pg 430 & 431 (New Edition)

Remarks:

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LESSON 3:
SUB TOPIC: REMOVING BRACKETS

CONTENT:
Remove the brackets and simplify.
Example:
1. 3(x + y)
   3(x + y)
   3x X + 3xy
   3x + 3y

2. 2(a – b)
   2(a – b)
   2 x a – 2 x b
   2a – 2b

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:9 and 22:10Pg 432 & 433 (New Edition)

Remarks:

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LESSON 4:

SUB TOPIC: REMOVING BRACKETS

CONTENT:
Remove the brackets and simplify.
Example:

1. Add: x + 4 to x + 1
   (x + 4) + (x + 1)
   X + 4 + x + 1
   X + x + 4 + 1
   2x + 5

2. x – 4 to 3x – 5
   (x – 4) + (3x – 5)
   x – 4 + 3x – 5
   x + 3x – 4 – 5
   4x – 9

3. Subtract y + 1 from 2y + 3
   (2y + 3) – (y + 1)
   2y + 3 – y – 1
   2y – y + 3 – 1
   Y + 2

4. Subtract 3p – 1 from 5p – 3
   (5p – 3) 0 _3p – 1)
   5p – 3 – 3p + 1
   5p – 3p + 1 – 3
   2p - 2

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:11 Pg 434 (New Edition)
Remarks:

LESSON 5:
SUB TOPIC: SIMPLIFYING FRACTIONAL TERMS
CONTENT: Simplifying fractional terms
Example:

1. $\frac{x}{2} + \frac{x}{3}$
   $\frac{3x + 2x}{6}$
   $\frac{5x}{7}$

2. $\frac{m}{2} - \frac{m}{5}$
   $\frac{5m - 2m}{10}$
   $\frac{3m}{10}$

3. $P + \frac{P}{3}$
   $= \frac{P}{1} + \frac{P}{3}$
   $= \frac{3P + P}{3}$
   $= \frac{4p}{3}$

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:14 Pg 435 (New Edition)

Remarks:

LESSON 6:
SUB TOPIC: REMOVING BRACKETS

CONTENT: removing brackets involving fractions
Example:

1. 1/3 (3a +9b)
   (1/3 x 3a) + (1/3 x b)
   a + 3b

2. ¾ (8m 0 12p)
   (3/4 x 8m) – (3/4 z 12p)
   3 x 2m – 3 x 3p
   6m – 9p

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:15 & 22:16 Pg 436 (New Edition)

Remarks:

LESSON 7:
SUB TOPIC: WORD PROBLEMS ON BRACKETS WITH FRACTIONS
CONTENT: Word problems on brackets with fractions
Example:

1. Half of (2x + 4y) plus a third of (6x + 9y)
   ½ (2x + 4y) + 1/3 (6x + 9y)
   ½ + 2x + ½ + 4y + 1/3 x 6x + 1/3 x 9y
   X + 2y + 2x + 3y
   X + 2x + 2y + 3y
   3x + 5y

2. Subtract ½ (4x – 2y) from 1/3 (6x – 9y)
   1/3 x 6x – 1/3 x 9y – ½ x 4x – ½ x 2y
   2x – 3y – 2x + y
   2x – 2x – 3y + y
   0 – 2y
   = -2y

EVALUATION ACTIVITY:

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A New MK Primary Mathematics 2000 Bk 7 exercise 22:17 Pg 437 (New Edition)

Remarks:

LESSON 8:
SUB TOPIC: **MULTIPLICATION OF FRACTIONAL TERMS**
CONTENT: multiplying of fractional terms
Example:
Simplify:

1. $\frac{x}{2} \times \frac{x}{5}$
   $= \frac{x \times x}{2 \times 5}$
   $= \frac{x^2}{10}$

2. $\frac{2m}{3} \times \frac{5p}{8}$
   $\frac{2 \times m}{3} \times \frac{5 \times p}{8}$
   $\frac{m}{3} \times \frac{5p}{4} = \frac{5mp}{12}$
   $\frac{5mp}{12}$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:19 Pg 439 (New Edition)

Remarks:

LESSON 9:
SUB TOPIC: **SUBSTITUTION**
CONTENT: Substituting or replacement of letters with numbers
Example:

1. If a = 5, b = 4 and c = 0
   Find the value of a + b + c
   = 5 + 4 + 0
   9 + 0
   = 9

2. Given that x = 2 and y = -2
   Evaluate x – y
   ((x) – (y)
   = 2 – (-2)
   = 2 + 2
   = 4

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:4 Pg 429 (New Edition)
Remarks:

LESSON 10:
SUB TOPIC: **SUBSTITUTION**
CONTENT: Substitution involving brackets
Example:

1. Given that a = 3, b = 4 and c = 5
   = 3 x a x 3 x b
   = 3 x 3 + 3 x 4
   = 9 + 12
   = 21

2. What is c (b-a)
   = 5(4 – 3)
   = 5(1)
   = 5 x 1
   = 5

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:12 Pg 434 (New Edition)

Remarks:

LESSON 11:
SUB TOPIC: **SUBSTITUTION**
CONTENT: Substitution involving fractions
Example:

1. Given a = ¾ b = 1/3
   Find the value of a + b
   (a) + (b)
   ¾ + 1/3
   $\frac{9 + 4}{12}$
   $\frac{13}{12}$
   $= 1\frac{1}{12}$

   ½ x 2/3 + ¼
   $= \frac{1}{3} + \frac{1}{4}$
   $\frac{4 + 3}{12}$
   $= \frac{7}{12}$

2. If a = ½, c = 2/3 and d = ¼
   Evaluate ac + d
   ac + d
   a x c + d

EVALUATION ACTIVITY:

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A New MK Primary Mathematics 2000 Bk 7 exercise 22:20 Pg 440 (New Edition)

Remarks:

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LESSON 12:

SUB TOPIC: **ADDITION AND SUBTRACTION WITH POWERS**

CONTENT: Addition and subtraction with powers

Example:

1. $2^2 + 2^4$
   $(2 \times 2) + (2 \times 2 \times 2 \times 2)$
   $2 \times 2 + 2 \times 2 \times 2 \times 2$
   $= 20$

2. $p^2 + p^2$
   $p^2 + p^2$
   $= 2p^2$

3. $3m^3 + 4m^3$
   $3m^3 + 4m^3$
   $= 7m^3$

4. $3o^3 - p^3$
   $3p^3 - p^3$
   $= 2p^3$

5. $4m^3 - m^3$
   $4m^3 - m^3$
   $3m^3$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:2 & 22:22 Pg 441 (New Edition)

Remarks:

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LESSON 13:
SUB TOPIC: **MULTIPLICATION OF POWERS**

CONTENT: Multiplication of powers
Example: Simplify

1. $4^3 \times 4^2$ or $4^3 \times 4^2$
   $4 \times 4 \times 4 \times 4x\ 4 = 4^5$
   4^{3+2}
   4^5

2. $x^3 \times x^2$
   $x \times x \times X \times x \times x^5$
   x^5

Or $X^3 \times x^2$
X^{3+2}
$= 4^5$

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:23 Pg 442 (New Edition)
Remarks:

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LESSON 14:
SUB TOPIC: **DIVISION OF POWERS**
CONTENT: Division of powers
Example: Simplify

1. $3^4 \div 3^2$
   Either $\frac{3 \times 3 \times 3 \times 3}{3 \times 3}$
   3×3
   $= 9$

   $3^4 \div 3^2$
   or 3^{4-2}
   $= 3^2$
   $= 3 \times 3$
   $= 9$

2. $p^8 \div p^2 = p^{8-2}$
   or $p^8 \div p^2$

   $\frac{p \times p \times p \times p \times p \times p \times p \times p \times p \times p \times p \times p}{P \times p}$
   $p \times p\ xp\ xp\ xp\ xp$
   $= p^6$

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:23 Pg 442 (New Edition)
Remarks:

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LESSON 15:
SUB TOPIC: **SUBSTITUTION**
CONTENT: Substitution involving powers
Example:

1. If m = 2, what is the value of m^6?
   M^6 $= m \times m\ xm \times m\ xm \times m$
   $= 2 \times 2 \times 2 \times 2 \times 2 \times 2$
   $= 4 \times 4 \times 4$
   $= 16 \times 4$
   $=64$

2. If y = 2, what is the value of $3y^2$?
   3y2 $= 3 \times y \times y$
   $= 3 \times 2 \times 2$
   $= 3 \times 4$
   $= 12$

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3. If m = 4, n = 3 and p = 2, what is $\frac{n^3 \times m^2}{Mp}$

$= \frac{n \times n \times n \times m \times m}{M \times p} = \frac{3 \times 3 \times 3 \times 4 \times 4}{4 \times 2} = \frac{27 \times 16}{8}$

$= 27 \times 2$

$= 54$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:25 Pg 443 (New Edition)

Remarks:

LESSON 16:

SUB TOPIC: REVISION OF SIMPLE EQUATIONS

CONTENT: Solving simple equations.

Example: Solve

1. $x + 5 = 13$
   $X + 5 - 5 = 13 - 5$
   $X = 8$

2. $2x + 6 = 18$
   $2x + 6 - 6 = 18 - 6$
   $2x = 12$
   $\frac{2x}{2} = \frac{12}{2}$
   $X = 6$

2. $y - 3 = 5$
   $y - 3 + 3 = 5 + 3$
   $y = 8$

4. $3a - 8 = 7$
   $3a - 8 + 8 = 7 + 8$
   $3a = 15$
   $\frac{3a}{2} = \frac{15}{3}$
   $a = 5$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Pg 452 - 456 (New Edition)

Remarks:

LESSON 17:

SUB TOPIC: SOLVING EQUATIONS

CONTENT: Equations involving fractions

Example: Solve

1. $\frac{1}{2} p = 6$
   Use of LCM
   $\frac{1}{2} p = 6$
   $2 \times \frac{1}{1} p = 6 \times 2$
   $2p = 12$

2. $4\ 2/3t + 2 = 15$
   Express all items as fractions
   $\frac{13}{3} t + \frac{2}{1} = \frac{15}{1}$ (LCM)
   $3 \times \frac{13t}{3} + \frac{2}{1} \times 3 = \frac{15}{1} \times 3$
   $13t + 6 = 45$
   $13 + 6 - 6 = 45 - 6$
   $13t = 39$
   $\frac{13t}{3} = \frac{39}{3}$
   $T = 13$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:44 Pg 457 (New Edition)

Remarks:

LESSON 18:

SUB TOPIC: SOLVING EQUATIONS

CONTENT: Equations involving fractions

Example: Solve

1. $0.4P + 0.5 = 2.1$
   $\frac{4P}{10} + \frac{5}{10} = \frac{21}{10}$
   $10 \times \frac{4P}{10} + \frac{5}{10} \times 10 = \frac{21}{10} \times 10$ (LCM)
   $4p + 5 = 21$
   $4p + 5 - 5 = 21 - 5$
   $4p = 16$
   $\frac{4p}{4} = \frac{16}{4}$
   $P = 4$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:44 Pg 457 (New Edition)

Remarks:

LESSON 19:

SUB TOPIC: SOLVING EQUATIONS

CONTENT: Equations involving fractions

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Example: Solve

1. $\frac{2p}{3} - p = 5$

$\frac{2p}{3} - \frac{p}{1} = \frac{5}{1}$

$3 \times \frac{2p}{3} - \frac{p}{1} \times 3 = \frac{5}{1} \times 3$

$2p - 3p = 15$

$-p = 15$

$\frac{+p}{+1} \quad \frac{15}{-1}$

$P = -15$

2. $3x + 7 - \frac{3x}{4} = 10$

$\frac{3x}{1} + \frac{7}{1} - \frac{3x}{4} = \frac{10}{1}$

$12x + 28 - 3x = 40$

$12x - 3x + 28 = 40$

$9x + 28 = 40$

$9x = 12$

$\frac{9x}{9} = \frac{12}{9}$

$X = 1\ ^1/_3$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:46 Pg 459 (New Edition)

LESSON 20:

SUB TOPIC: **SOLVING EQUATIONS**

CONTENT: Equations involving fractions

Example: Solve

1. $\frac{m+1}{3} + \frac{m}{4} = 2$ (observation of three items)

$\frac{M+1}{3} + \frac{m}{4} = \frac{2}{1}$ (LCM)

$12 \times \frac{m+1}{3} + \frac{m}{4} \times 12 = 2 \times 12$

$4(m + 1) + m \times 3 = 2 \times 12$

$4m + 4 + 3m = 24$

$4m + 3m + 4 = 24$

$7m + 4 = 24 - 4$

$7m = 20$

$\frac{7m}{7} = \frac{20}{7}$

$M = 2\ ^6/_7$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:49 Pg 461 (New Edition)

Remarks:

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LESSON 21:

SUBTOPIC: **SOLVING EQUATIONS**

CONTENT: Equations involving fractions

Example: Solve

1. $\frac{(3x+1)}{4} = \frac{(x+2)}{2}$

$4 \frac{(3x+1)}{4} = 4\frac{(x+2)}{2}$

$3x + 1 = 2(x + 2)$

$3x + 1 = 2x + 4$

$3x + 1 - 1 = 2x + 4 - 1$

$3x = 2x + 3$

$3x - 2x = 2x - 2x + 3$

$X = 3$

2. $\frac{3x-1}{2} = \frac{7x+1}{6}$

$6 \frac{(3x-1)}{2} = 6 \frac{(7x+1)}{6}$

$3(3x - 1) = 7x + 1$

$9x - 3 = 7x + 1$

$9x = 7x + 4$

$9x - 7x = 7x - 7x + 4$

$2x = 4$

$\frac{2x}{2} = \frac{4}{2}$

$X = 2$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:50 Pg 462 (New Edition)

Remarks:

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LESSON 22:

SUB TOPIC: **SOLVING EQUATIONS**

CONTENT: Solving Equations involving squares

Example: Solve

1. $\frac{1}{2} P^2 = 8$

$2 \times \frac{1p^2}{2} = 8 \times 2$

$P^2 = 16$

$\sqrt{P^2} = \sqrt{16}$

$P = 4$

2. $\frac{1}{4} x^2 = 16$

$4 \times \frac{1}{4} x^2 = 16 \times 4$

$x^2 = 64$

$\sqrt{x^2} = \sqrt{64}$

$x = 8$

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 exercise 22:47 Pg 461 & 460 (New Edition)

Remarks:

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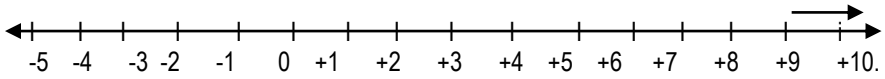
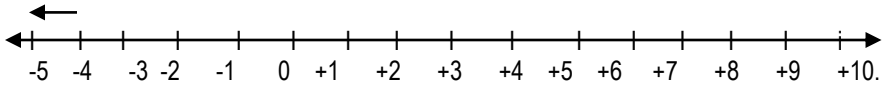
LESSON 22:
SUB TOPIC: **SOLVING EQUATIONS**
CONTENT: Word problems on equations
Example:
1. Baker bought 2kg of suagr at shs. 3p and 1kg of salt at sh (p + 200). Find P if Baker paid shs 3700= The cost of 2kg of sugar is shs (2 x 3p) = 6p. The cost of 1kg of salt is sh (p + 200)
Total cost 6p + p + 200 = 3700=
7p + 200 = 3700
7p + 200 – 200 = 3700 – 200
7p = 3500
$\frac{7p}{7}$ $\frac{3500}{7}$
P = shs 500

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 exercise 22:51 Pg 464 (New Edition)
Remarks:

SUB TOPIC: **SOLUTION SETS**
CONTENT:
Examples:
1. Write down the integers for the following inequalities.
(i) x > 8
X = {9, 10, 11, 12, 13, ….} (infinite set)
(ii) x < - 3
X = {-4, -5, -6, -7, -8, ….} (infinite set)
Showing solution sets on a number line.
(i) x > 8



(ii) x < -3



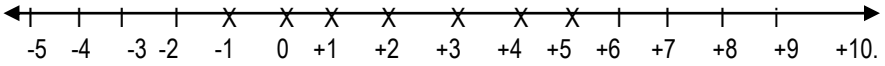
EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Exercise 6:1 Pg 71 (New Edition)

Remarks:

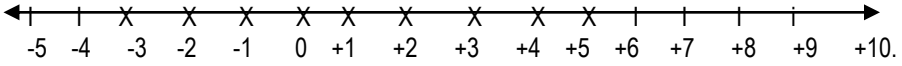
LESSON 12:

SUB TOPIC: **REPRESENTING OF FINITE SOLUTION SETS ON ANUMBER LINE**
CONTENT:
Example
1. -2 < x < 6 Find and show the solution set on a number line



X = {-1, 0, +1, +2, +3, +4, +5}

2. Give the solution set and the inequality shown on the number line.



Solution: -4 < x <+6
X = {-3, -2, -1, 0, +1, +2, +3, +4, +5}

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Exercise 6:2 Pg 72 (New Edition)

Remarks:

LESSON 13:
SUB TOPIC: **SOLVING INQUALITIES AND WRITING THEIR SOLUTION SETS**
CONTENT:
Examples:
1. 4X > 20

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4X > 20
4 4
X > 5
Solution set: {6, 7, 8, 9, 10….}

2. -4X > 20
-4x < 20 (the inequality sign changes when multiplied/divided by –ve integer)
-4 -4
X < -5
Solution set: x = {-6, -7, -8, -9, …..}

3. 3x + 6 < 9
3x + 6 – 6 < 9 – 6
3x < 3
3 3
X < 1
Solution set: x = {0, 1, 2, 3, ….}

EVALUATION ACTIVITY:
A New MK Primary Mathematics 2000 Bk 7 Exercise 6:3 and 6:4 Pg 74 (New Edition)

Remarks:

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LESSON 14:
SUB TOPIC: SOLVING INQUALITIES INVOLVING FRACTIONS
CONTENT:
Examples:
Examples

1. Solve $\frac{x}{3} > 1$
$3 \times \frac{X}{3} > 1 \times 3$
X > 3
Solution set x = {4, 5, 6, 7, ….}

2. $\frac{1x}{7} - 5 > -4$
$1x - 5 + 5 > -4 + 5$
$1x > 1$
$7 \times 1x > 1 \times 7$
$X > 7$
Solution set: x +{8, 9, 10, 11, ….}

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Exercise 6:5 Pg 76 (New Edition)

Remarks:

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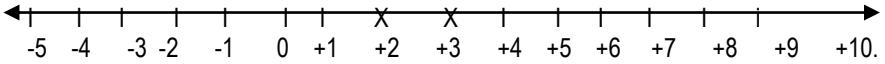
LESSON 15:
SUB TOPIC: SOLVING INQUALITIES WITH THREE TERMS
CONTENT:
Examples:
Examples

1. Solve 8> 2x >2
$\frac{8}{2} > \frac{2x}{2} > 2$
4 > x > 1

Note with < or > the integers in the inequality are not members of the solution set.



Solution set: x = {+2, +3}

2. 12< 3x<24
$\frac{12}{3} < \frac{3x}{3} < \frac{24}{3}$
4< x < 8

Note with < or >, the integers in the inequality are members of the solution set.

3. Solve 13 > 3x – 2 > 4
13 + 2 > 3x – 2 + 2 > 4 + 2
15 > 3x > 6
15 > 3x > 6
3 3 3
5 > x > 2

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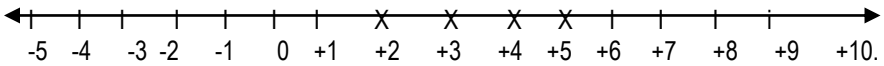

Solution set: x = {+2, +3, +4, +5}

EVALUATION ACTIVITY:

A New MK Primary Mathematics 2000 Bk 7 Exercise 6:6 Pg 77 (New Edition)

Remarks:

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LESSON 29

SUB TOPIC : INQUALITIES INVOLVING BRACKETS

CONTENT:

1. Solve 2(x+1) . 4
2. Solve 3(2x+3) <18

Ref: Mk bk 7 pg 449

LESSON 17

SUB TOPIC: APPLICATION OF INEQUALITIES

CONTENT: the Headteacher's car can accommodate maximumly 5 passengers. Using letter X write an inequality for the above given statement

TOPIC: INTEGERS:

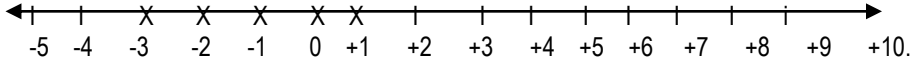
TOPICAL QUESTIONS:

1. Use >, < or = to compare the following pairs of integers.
   (i) -2 0 (ii) -1 -3 (iii) -6 -6
   (iv) 8 8 (v) 5 -5 (vi) -7 7
2. Arrange the following integers in ascending order (increasing order)
   -8, 2, -1, 5, -3, +7
3. Arrange the integers below in descending order.
   0, -7, +4, -6, +1
4. Add the following integers.
   (i) +1 + +7 (ii) +8 + -2 (iii) +18 + -18
   (iv) -3 + +9 (v) -4 + +5
5. Subtract the following integers.
   (i) +4 - +2 (ii) +7 - -4 (iii) -3 - +7
   (iv) -3 - -11 (v) 8 - +8
6. Subtract +6 - -4 on a number line
7. Multiply:
   (i) +4 x -2 (ii) -6 x -3
8. Divide:
   (i) -9 ÷ -3 (ii) 27 ÷ -9
9. Evaluate: $\frac{-2 \times 8}{-4}$
10. Flavia was born in 2BC and she died in 38AD after her birthday. How old was she when she died.
11. John left a balance of shs 1,000 with the milk vendor. He then bought 5 litres of milk from the milk vendor. How much did he pay to meet his bill?
12. Iganga FC arrived at Nakivubo Football stadium 15 minutes before the start of the football match. The team left the stadium 15 minutes after the end of a 45 minutes first half of the match. How long was the team I the stadium?
13. In an examination you are awarded 7 marks of every correct answer and 3 marks deducted for every wrong answer. A candidate had 9 questions correct and 5 questions wrong. What mark did the candidate score?
14. A clock which loses 7 minutes shows 5:36pm. What is the real time?

TOPIC: SOLUTION SETS:

TOPICAL QUESTIONS:

1. Use >, < or = to compare the pairs of integers below.
   (i) 5 8 (ii) -3 -8 (iii) -7 -7
   (iv) 9 1 (v) 0 -1 (vi) 17 +17
2. Find the solution set for the following inequalities:
   (i) x > 3 (ii) x < -5 (iii) $x \leq 2$
   (iv) $x \geq 2$ (v) x < 4
3. Write down the inequality shown on the number line below.



4. Solve and give the solutions et for x.
   (i) -3x < -9 (ii) -30 < 6x
   (iii) $3x + 2 \leq 11$ (iv) $4x - 5 \leq 19$
5. Solve and find the solution set for y.

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$\frac{1}{3}y + 4 < 6$

6. Solve the inequality below:
$8 > 2x \geq -4$

TOPICAL EXERCISE ON ALGEBRA

1. Solve: x + 1/4 x = 5

2. Find the value of $\frac{5a - (m - a)}{a}$ when a = 3 and m = 6.

3. Solve for b = 3/5 (2b – 3) = 3

4. Zahara's mother bought 8 books at shs (x – 150) each and 2 Mathematical sets at (x + 100) each. She spent shs 5300 altogether. Find the amount of money spent on books.

5. If 1/6x = 1 1/6 find the value of x.

6. Solve $\frac{2x + 2}{3} = \frac{x + 3}{2}$

7. What is the value of $\frac{bc - d}{C^2}$ when b = 8, c = 3 and d = 6?

8. Solve: x – 1 = 2x + 5

9. Simplify: (3x + 5) – (x + 1)

10. Solve: ½ (3y – 2) = $\frac{2}{3}$ (2y + 3)

11. Tom has three daughters; Amanda, Brenda and Kate. Brenda is 2 years younger than Amanda, Kate's age is ½ that of Brenda. The total age of the three girls is 27 years. How old is Kate?

LESSON 11:

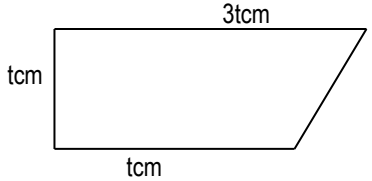
12. Find the value of y in $2y + \frac{2}{3}t = 12$. Given that t = ½.

13. Solve: 3(p – 4) – 2 (3p – 1) = 2p – 15

14. Simplify: (4p – 3q) – (2q + p)

15. Solve: $\frac{12}{x} + 2 = 6$

16. The area of the trapezium is 50cm^2. Find the value of t.



17. Factorise completely: 2xy – 4x.

18. Given that a = ½, b = 1/3 and c = ¼ Find the value of b + 2c + 3a.

19. Subtract 2x – 4 from 5x – 4

20. Given that x = 2y + 1, complete the table.

x	1	……	5	…	9
y	…	1	…	3	…

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